Economic &
Planning Systems

*Public Finance*
*Real Estate Economics*
*Regional Economics*
*Land Use Policy*

**FINAL REPORT**

# REGIONAL ECONOMIC ANALYSIS (TRENDS, YEAR 2000 & BEYOND)



Prepared for:

East Bay Regional Park District

Prepared by:

Economic & Planning Systems, Inc.

*In association with:*

Strategy Research Institute

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RESEARCH
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# TABLE OF CONTENTS

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF TABLES

# EXECUTIVE SUMMARY

The East Bay Regional Park District commissioned Economic & Planning Systems (EPS) to conduct this study of the economic benefits the District confers on the East Bay region. This study considers the economic and quality of life benefits received by District residents in return for their annual property tax investment in the District—which is expected to total $78.40[1] in the year 2000—equivalent to $6.55 each month. In addition, this study focuses on the rationale for sustaining and enhancing more than 91,000 acres of parks, open space, and trails, and for strengthening the relationship between the District and its constituent local governments and business community.[2]

The overall conclusions of the study suggest that the regional park system of open space, parks, trails, and recreational facilities are:

- An essential part of the urban fabric of the East Bay and key to future efforts to "sustain the region" as it continues to mature and develop.
- A fundamental component of the region's "quality of life" that is inextricably linked to the vitality of the East Bay's economy.

These conclusions derive from a detailed set of findings relating to the benefits of parks, open space, and trails as described below:

1. **Quality of Life**. District parks, open space, and trails contribute to the high quality of life in the East Bay and the greater San Francisco Bay Area. This high quality of life attracts new and retains existing businesses, driving local and regional economic growth and generating jobs and income for District and other Bay Area residents.

2. **Property Values**. District parks, open space, and trails, by increasing the quality of life in the East Bay, enhance the property values of homes throughout the District. In addition, they directly increase property values of homes adjacent and close to the parklands due to the views and immediate access provided.

3. **User Utility**. User utility is defined as the value park users place on the experience. The total user utility received by District park users is currently estimated at about $74 million each year, equivalent to $5.30 per visit. These values are generally provided to a diverse set of park users at zero or well-below the actual cost of provision.

[1] About $15.70 of this amount is associated with Bond Measure AA.

[2] In estimating certain economic benefits, EPS used data from user surveys and voter surveys conducted over a period of several years to corroborate the District's reported usage patterns. These surveys were conducted by Strategy Research Institute of Fullerton, California.

# EXECUTIVE SUMMARY

4. **Agricultural Production**. While there are some differing points of view regarding the appropriateness of grazing, the District's existing policy to permit grazing generates some benefits including $740,000 in gross pasture and range production value each year, an enhancement of the ranching industry as a whole through the creation of larger contiguous areas for grazing uses and protection of other grazing lands from urban encroachment, and wildland management and fire protection benefits.

5. **Ecosystem Services**. The District's preservation of lands and natural resources ensures that the region enjoys a series of ecosystem services, including climate and gas regulation, water supply, erosion control, nutrient recycling, and waste treatment. Without this land preservation, public costs would be incurred through the need for additional wastewater treatment capacity, private costs may be incurred through the need for water filtration systems or property damage due to landslides, and air quality might worsen.

6. **Urban Form**. The District's provision of regional parks, open space, wildlife habitat, and recreation facilities are an integral part of the East Bay's urban fabric creating a positive and permanent urban edge. District lands, along with other public open spaces, define urban form throughout the East Bay, and, in so doing, contribute to a sustainable future for our cities and towns.

7. **Health, Education, Public Safety, and Transit Benefits**. The District provides a variety of benefits that accrue to both public sector entities charged with providing a range of services, as well as directly to individual park users and the broader community. These benefits include health benefits through increased exercise, educational benefits through the environmental interpretative programs, public safety benefits through police and fire services and wildland management, and transit benefits through regional trails connecting parks, homes, employment centers, and shops.

8. **Replacement Value**. A highly conservative estimate of the "replacement value" of District land (the cost of preserving District lands today if they had not been preserved in the past) is $960 million. The District actually spent $365 million in 2000 dollars in acquiring this land.

9. **User Expenditure Economic Impacts**. The presence of the Park District results in total direct expenditures by park users in the East Bay of about $254 million each year on durable and non-durable goods. About $74 million, or 25 percent, represent net new direct expenditures in the East Bay economy—i.e., total expenditures on all goods in the East Bay are $74 million higher due to the presence of the District lands and facilities. The total annual economic impact of these net new expenditures is $148 million, when multiplier effects are taken into account.

10. **District Expenditure Economic Impacts**. The District currently spends about $80 million each year, including $59 million on operations and maintenance and about $21 million on capital expenditures. A total of 540 permanent employees work for the District as well as an additional 215 seasonal employees. The majority of these expenditures are funded through local taxation, though about 9.1 million represents net new annual expenditures funded by non-local grants and charges for services paid by non-District residents. The total annual economic impact of these net new expenditures is $18.2 million, when multiplier effects are taken into account.

# I. INTRODUCTION

## PURPOSE OF REPORT

The East Bay Regional Park District (Regional Park District) commissioned Economic & Planning Systems (EPS) to conduct a study of the economic benefits it confers on the East Bay region. A popular summary report was also produced. The entire effort is intended to enhance relationships with community, local government, business and environmental leaders and, through this relationship, improve and expand open space, parks, trails, and other recreational facilities as the East Bay grows and develops.

The philosophy underlying this effort is that open space, parks, trails, and other recreational facilities are an essential part of the urban fabric of the East Bay, conferring broad benefits to residents, businesses, and other government agencies; secondly, that the vital economy of the region is linked directly to "quality of life" benefits; and, lastly, that future efforts to "sustain the region" as it continues to mature and develop rely on maintaining and improving open space, parks, trails, and other recreational facilities. This notion of "sustaining the region" is a challenge faced by the combined residents, businesses, and local government agencies in the region. While the East Bay is enjoying phenomenal economic success it is important to recall what lies at the root of this success: a desirable place to live and do business. Moreover, this economic success should be managed in a way that preserves what is valuable to residents and addresses specific problems such as environmental degradation and social inequities.

This Report classifies and evaluates the economic benefits provided to the East Bay by the open space, parks, trails, and other recreational facilities created and maintained by the Regional Park District. These economic benefits are described for residents, businesses, cities, and other public agencies located within the Regional Park District. A documentation of the open space, parks, trails, and other recreational facilities maintained by the Regional Park District and general demographic, economic, and land use trends of the East Bay region are included to establish a context for the discussion of economic benefits and to define the challenges faced by the Regional Park District as it continues to pursue its mission.

The study and the subsequent outreach efforts are part of a broader effort by the Regional Park District to ensure its continued vitality and responsiveness to the needs of its constituents. The objectives of this broader effort include the following:

- Ensure general and financial support for existing and future EBRPD programs and services.

- Ensure land is available for future regional parks, open space, and trails.

- Inform district constituents, community leaders, and government decision makers about the economic benefits generated by the EBRPD.

- Demonstrate the importance of the parks system to both park users and to the environment.

- Show how the parks system promotes social equity and interaction by offering a wide variety of recreational uses and programs at no or low cost.

- Indicate the advantages of EBRPD's function as a special purpose regional government and its accomplishments since its inception.

- Demonstrate the benefits provided by EBRPD to East Bay cities and counties.

- Strengthen linkages with local, state, federal, and conservation agencies in providing parks, recreation, and open space.

## ORGANIZATION OF THE REPORT

The preceding **Executive Summary** provides a summary of key report conclusions and findings. **Chapter I** (this chapter) provides an introduction to and establishes the strategic objectives of the Report. **Chapter II** provides an overview of the Park District, in terms of land quantity and type, land location, land use and visitation, and the history of land acquisition. **Chapter III** describes the existing and expected context within which the District operates and will operate in terms of demographics, socioeconomic, and land supply, and highlights some of the challenges to the District. **Chapter IV** describes the economic benefits provided by parks, trails and open space, and relates them to the EBRPD based on its characteristics and context.

# II. DESCRIPTION OF EBRPD

The East Bay Regional Park District (EBRPD) owns, manages, and operates a large system of parks, open space, and trails that provides a broad range of recreational opportunities and conserves a significant array of ecosystems. Established in 1934, the jurisdiction of the District has grown from a subset of Alameda County to the full two-county (Alameda and Contra Costa) area. In particular, the District has grown from managing 2,000 acres of former watershed lands in the East Bay hills—declared surplus by EBMUD's predecessor—to being responsible for over 91,000 acres of parks, open space, and trails, including 59 regional parklands and 1,000 miles of trails.

The regional park system operated and managed by the District is the backbone of the East Bay's "green" infrastructure, representing 9.5 percent of the two-County land area and almost 50 percent of all land protected through ownership of development rights in the two Counties. This "green infrastructure," and associated environmental preservation, ensures environmental and aesthetic quality in the region. In addition, it provides outdoor recreation and educational and cultural opportunities to all East Bay residents, residents of adjacent counties, and tourists.

The District owns about 90 percent of this land, about 82,000 acres, and operates and manages the remaining 9,000 acres for a variety of owners, including fifteen cities, the Alameda, Contra Costa, and San Francisco Water Districts, EBMUD, the State of California, and the Federal Government, among others. At present, about 74,400 acres of open space are used for conservation and/or recreation purposes, and 16,500 acres are currently held in landbanks until adequate funding becomes available to cover opening and maintenance costs.

As of the year 2000, the District park system comprises over 1,000 miles of regional and internal trails and 59 regional parks, shorelines, preserves, and recreation areas. The majority of this 91,500-acre land area, about 76,500 acres or 83.5 percent, is primarily dedicated to conservation allowing limited public access and providing vital ecosystems to a variety of habitats and animal forms. Another 15,000 acres (16.5 percent of all District lands) permit a variety of public activities under current District zoning. These areas offer a wide variety of recreational, educational, and cultural opportunities, attracting about 14 million visits[1] each year and appealing to a broad cross-section of District residents, as well as other Bay Area residents and tourists from other states and nations.

The size, range, and regional importance of the lands, programs, and functions associated with the District are greatly enhanced by the range of collaborations in which it engages, including the following:

[1] Average annual park visitation represents the mid-point of high (15.5 million) and low (12.5 million) visitation estimates for 1999. See **Appendix A** for further explanation of these estimates.

- In terms of recreational opportunities, the District functions on many levels. In some cases, it provides land, facilities, and operations, and in other cases it provides the land while concessionaires run the operations. In still other examples, the District provides either the land and/or facilities while other entities such as School Districts, scout organizations, and other community and business groups organize their own activities.

- In terms of land management and operations, the District operates and manages lands owned by other entities, including cities, water districts, and the State, which allows for more efficient and unified operations and management of preserved land. These lands may be parklands, water district lands, or in some cases land preserved through mitigation agreements between other parties.

- In terms of parks and open space planning, the District selects its acquisitions in part based on the goal of contiguousness with other agencies' parks and open space, provides a base of parks and open space around which local jurisdictions have the option of planning their park development, and provides connectors between these areas through its regional trails and wildlife corridors.

- In terms of public service provision, as discussed further in **Chapter IV**, the District collaborates with local agencies in providing public services, including police, fire, and education.

The sections below describe the District in more detail in terms of the following:

1. The types of parks, trails, and open space provided.
2. The location of these lands throughout the two-County area.
3. The conservation, recreation, education, and transit functions of the District lands, services, and facilities, and associated park users and visits.
4. The land acquisition history, in terms of acres and cost.

The information included in these sections demonstrates the scope of District operations and functions and informs the discussion of the economic benefits provided by the District described in **Chapter IV**.

## TYPES OF PARKS, OPEN SPACE, AND TRAILS

The District has developed a classification schema for District lands that divides land based on operational status (open or closed [landbank]), recreational activity permitted (low, medium, and high proportion of land area permitted for recreational use), conservation value (the type and range of habitats/species present), location (shoreline versus inland), and design and dimensions (parks versus trails). These classifications and the associated acreage and uses provide a useful overview of the District's multi-faceted goals, including the balancing of recreational and conservation needs, which are implemented through their acquisition, maintenance, and management strategies.

At present the District operates 91,000 acres of land. About 74,400 acres are open and operational, actively used for recreation and/or conservation purposes, with the remaining 16,500 acres closed and held in landbanks. All land owned or operated by the District falls into one of five types/classifications, including Regional Park, Regional Shoreline, Regional Recreation Area, Regional Preserve, and Regional Trail. Land held in landbanks is also assigned a classification for when it becomes active. A breakdown of the number and acres of land by operational status, park type/classification, and area permitted for recreational use is shown in **Table II-1** and described below by park type.

## REGIONAL PARKS

Regional Parks must be 500 acres or more and include land and water, be located inland, and have natural features that include rare species of flora and fauna. At least 70 percent of its area must have scenic or natural resources. It should have the capacity to accommodate a variety of recreational activities. These activities must take place in a designated Recreation/Staging Unit that does not include more than 30 percent of the park's area.

At present, there are 16 regional parks within the District located on 29,800 acres of open land (about 40 percent of open District land) with an average of over 1,850 acres per park. The maximum area currently permitted for recreational use is about 9,000 acres. An additional 5,400 acres of land (about 32 percent of landbank acres) are expected to become part of the regional park system when land currently in the landbank is opened.

## REGIONAL SHORELINE

Regional Shorelines must provide recreational, interpretive, natural, and/or scenic values on land, water, and tidal areas along the Bay and Delta. The shoreline must contain a variety of natural environments and manageable units of tidal, near-shore wetland, and upland areas that can be used for scientific, interpretive, or environmental purposes. Alternatively, the shoreline must contain sufficient land and water to provide a variety of recreational activities, such as swimming, boating, fishing, or viewing. These activities must take place in a designated Recreation/Staging Unit that does not include more than 30 percent of the park's area.

At present, there are 15 shoreline parks within the District located on about 7,700 acres of open land (about 10.5 percent of open District lands) with an average of over about 500 acres per park. The maximum area currently permitted for recreational use is about 2,300 acres. An additional 4,900 acres of land (about 29 percent of landbank acres) are expected to become part of the regional shoreline park system when land currently in the landbank is opened.

**Table II-1**
**District Land by Park Type**
**East Bay Regional Park District Economic Study**

| Park Type | # of Open Parks & Trails | Open Area Acres | Open Area % | Landbank (1) Acres | Landbank (1) % | Total Acres | Total % | Open Area Max. Rec. Use % (2) | Max. Rec. Use Acres | Max. Rec. Use % |
|---|---|---|---|---|---|---|---|---|---|---|
| Recreation Area | 9 | 1,041 | 1.4% | 657 | 3.8% | 1,700 | 1.9% | 90% | 940 | 6.3% |
| Regional Park | 16 | 29,791 | 40.0% | 5,410 | 31.6% | 35,200 | 38.5% | 30% | 8,940 | 59.6% |
| Regional Preserve | 19 | 34,028 | 45.7% | 4,943 | 28.9% | 38,970 | 42.6% | 3% | 980 | 6.5% |
| Regional Shoreline | 15 | 7,740 | 10.4% | 5,538 | 32.4% | 13,280 | 14.5% | 30% | 2,320 | 15.5% |
| Subtotal | 59 | 72,599 | 97.6% | 16,548 | 96.8% | 89,150 | 97.4% | | 13,180 | 87.9% |
| Regional Trail | 15 | 1,806 | 2.4% | 580 | 3.4% | 2,390 | 2.6% | 100% | 1,810 | 12.1% |
| **Total** | **74** | **74,400** | **100%** | **17,100** | **100%** | **91,500** | **100%** | **--** | **15,000** | **100%** |

(1) Land in landbanks are not open to the public.

(2) Maximum recreational use percentage as defined by District zoning applied to open park acres.

Source: East Bay Regional Park District - Land Acquisitions Handbook/GIS System; Economic and Planning Systems, Inc.

## REGIONAL RECREATION AREA

Regional Recreational Areas must be at least 40 acres, including both land and water. They must be suitable for recreational development and be able to withstand intensive public use. Recreational activities must take place in a designated Recreation/Staging Unit that consists of up to 90 percent of the park's area.

At present, there are nine regional recreational areas within the District located on about 1,000 acres of open land (about 1.5 percent of open District lands) with an average of 115 acres per recreation area. The maximum area permitted for recreational use is 940 acres. An additional 660 acres of land (about 4 percent of landbank acres) are expected to become part of the system of regional recreation areas when land currently in the landbank is opened.

## REGIONAL PRESERVE

Regional Preserves should protect and preserve significant cultural and natural resources. Preserves must have great natural or scientific importance or be of significant regional or cultural value. Within this classification there are three designations: Natural or Cultural Preserve, Wilderness Preserve, and Open Space Preserve, as described below.

1. **Natural or Cultural Preserves** must be large enough to ensure that the resources can be properly managed for protection and public enjoyment. The Recreation/Staging Unit, providing public activities and services, cannot comprise more than 5 percent of the preserve area.

2. **Wilderness Preserves** must be at least 3,000 acres and be sufficiently wide at all points to minimize noise or other disturbance to wilderness quality. The Recreation/Staging Unit cannot comprise more than one percent of the preserve area.

3. **Open Space Preserves** will be about 200 acres or more of undeveloped open space within or bordering an urban area. Permitted uses include agriculture or passive recreational activities that do not require substantial facilities or improvements.

At present, there are nineteen regional preserves within the District, located on about 34,000 acres of open land (about 46 percent of open District lands) with an average of 1,800 acres per preserve. Over half of this acreage falls within Wilderness Preserves. The maximum area permitted for recreational use is about 980 acres, 180 acres of which are in the Wilderness Preserves and 800 acres at Natural/ Cultural and Open Space

Preserves. An additional 4,900 acres of land (about 29 percent of landbank acres) are expected to become part of the regional preserve system when land currently in the landbank is opened.

REGIONAL TRAIL

Regional Trails provide non-motorized, multiple-use connections between District Parks and parks of other agencies or other areas of regional significance. They also connect parks and trails to transit centers, schools, colleges, civic centers, employment centers, commercial complexes, or residential areas. The trails are part of the national, State, or Bay Area regional trail system.

At present, there are 15 regional trails that together provide about 330 miles of linear trail (120 miles inside regional parklands, and 210 miles outside regional parklands), while occupying only 1,800 acres of open land (about 2.4 percent of open District lands). An additional 580 acres of land (about 3.5 percent of landbank acres) are expected to become part of the regional trails system when land currently in the landbank is opened.

## LOCATION OF PARKLAND

Since 1992 the District boundaries have covered the entire East Bay, including the counties of Alameda and Contra Costa. The regional park system is distributed throughout this two-County area. The distribution of parklands throughout the District is shown in **Table II-2** and described below.

- **County Distribution.** Parkland is split relatively evenly between the two counties, with about 50,000 acres in Alameda County (55 percent), and 41,500 in Contra Costa County (45 percent). About 1.47 million (61 percent) of District residents reside in Alameda County, while 942,000 (39 percent) reside in Contra Costa County. On a per capita basis, Contra Costa County is slightly better served with 44.7 acres per 1,000 residents, compared with Alameda County's 34.4 acres per 1,000 residents.

- **Incorporated versus Unincorporated Areas.** The regional nature of the Park District has resulted in the majority of acreage, 67,300 acres (about 74 percent), being located in the unincorporated areas of the two counties. While over 85 percent of District residents live in incorporated areas, the regional parks serve all County residents, often being located adjacent to city boundaries and within a 30-minute drive of all District residences. The other 24,200 acres (26 percent) are located within city boundaries, providing an average level of service within city boundaries of 11.5 acres per 1,000 city residents. About 19,500 acres, 80 percent, are in cities that border the shoreline where 75 percent of city residents live, and 4,700 acres, 20 percent, are in other inland cities, where 25 percent of city residents live.

**Table II-2**
**Parkland by Location**
**East Bay Regional Park District Economic Study**

| Geographic Unit | Acres | % | Population | % | Acres/ 1,000 Pop. |
|---|---|---|---|---|---|
| **Counties** | | | | | |
| Alameda County | 49,956 | 55% | 1,462,700 | 61% | 34.2 |
| Contra Costa County | 41,544 | 45% | 941,900 | 39% | 44.1 |
| Total | 91,500 | 100% | 2,404,600 | 100% | 38.1 |
| **City/ Unincorp.** | | | | | |
| Incorporated Area | 24,231 | 26% | 2,104,000 | 87% | 11.5 |
| Unincorporated Area | 67,269 | 74% | 300,600 | 13% | na |
| Total | 91,500 | 100% | 2,404,600 | 100% | 38.1 |

Source: East Bay Regional Parks District; Economic & Planning Systems, Inc.

# TYPES OF PARKLAND USE

The District park system serves two fundamental purposes: (1) to conserve the area's significant natural resources, and (2) to provide recreational, aesthetic, and educational opportunities to District residents. The sections below describe how the regional park system fulfills these goals.

## CONSERVATION

District lands permit the conservation of a variety of significant natural resources, often within large contiguous areas that cross jurisdictional boundaries. These natural resources are primarily spread among the District's parks and open space classified as regional parks, regional shoreline, and regional preserves. The total land areas, average contiguous sizes, and general type of environmental resources are described below.

- **Regional parkland** includes over 26,000 acres of land that support rare species of flora and fauna and are not open to recreational uses. These environmental resources are contained in contiguous areas of over 1,600 acres on average.

- **Regional shoreline** includes over 10,000 acres of land and water that are not open to recreational uses and include a variety of natural environments and manageable units of tidal, near-shore wetland, and upland areas. These environmental resources are contained in contiguous areas of over 700 acres on average.

- **Regional preserve** includes, most importantly, Natural/Cultural Preserves and Wilderness Preserves. Natural/Cultural Preserves include about 18,000 acres of land with significant natural or cultural resources, not open to recreational use, in average contiguous areas of 1,800 acres. Wilderness Preserves include about 20,000 acres of land that are not open to recreational uses and are contained in contiguous areas of over 6,000 acres on average.

As of 1996, the District had identified more than 500 sites that contain distinctive or irreplaceable resources that require conservation or special management. These include sites containing species of plants or animals listed as rare, threatened, or endangered by state or federal government, sites with species included on a District list of special concern, sites having notable cultural, historical, geological, archeological, or paleontological features, and locations identified as unique natural habitat.

The regional park system also includes eleven key habitat groups types, including: grasslands, chaparral, shrublands, oak woodlands, oak/bay woodlands, mixed evergreen forests, redwood forests, riparian areas, Bay open water and tidelands, Bay

marsh of wetlands, and fresh marsh and wetlands. These habitat types support a variety of special animal populations, including special bird populations such as the American avocet and animal populations such as the kit fox.

RECREATION / EDUCATION / TRANSIT

The District offers a variety of recreational opportunities as well as educational and transit options to District residents, to other Bay Area residents, and to tourists from other states and countries. Surveys of District voters extrapolated to all users based on other park studies imply that about 90 percent of East Bay residents visit District lands at least once every year. **Table II-3** presents estimates of visitation by activity, which are described more fully in **Appendix A**. Some of the key findings of these visitation estimates are described below.

- Total annual visitation is about 14 million, including 10.65 million visits from East Bay residents and 3.35 million from non-East Bay residents.

- There are about 290,000 formal educational visits (2 percent of total visits) associated with the visitor centers and associated environmental interpretative programs. These visits include adults as well as numerous school children.

- Regional trail visits include recreational uses as well as walking and biking transportation trips. No precise estimate has been made, but based on user interviews at Iron Horse Trail and Delta de Anza Trail, a 20 percent use of regional trails for transportation is conservative. As a result, about 750,000 annual regional trail visits are estimated to be transportation-related, about 5 percent of all parks and trails visits.

- The remaining visits, about 13 million, are recreation-related. Over 9.4 million visits, about 70 percent, involve either walking, hiking, running, biking, dog walking, or picnicking as their primary purpose. The remaining 3.6 million, or 30 percent, involves fishing, swimming, equestrian, camping, golfing, boating, facility rental, or other uses.

## LAND ACQUISITION HISTORY

As mentioned above, the District has grown in over 66 years from managing 2,000 acres of former watershed lands in the East Bay hills—declared surplus by EBMUD's predecessor—to being responsible for about 91,500 acres of parks, open space, and trails. The District has strategically added land over time as financial resources became available, and as its boundaries expanded it agreed to manage lands owned by other agencies. **Table II-4** presents the land acquired over time in terms of acres, type of

## Table II-3
## Average Annual Park Visitation*
## East Bay Park District Economic Study

| Activity | Parks (1) Visitors | Trails Visitors | Total Visitors |
|---|---|---|---|
| WALKING, HIKING, RUNNING, ETC. | 2,795,000 | 1,745,000 | 4,540,000 |
| BICYCLE RIDING | 785,000 | 1,330,000 | 2,115,000 |
| DOG WALKING | 1,525,000 | 425,000 | 1,950,000 |
| OTHER (2) | 1,410,000 | 135,000 | 1,545,000 |
| PICNIC | 1,320,000 | 0 | 1,320,000 |
| FISHING | 490,000 | 10,000 | 500,000 |
| SWIMMING | 450,000 | 10,000 | 460,000 |
| EQUESTRIAN | 290,000 | 90,000 | 380,000 |
| ENVIRONMENTAL EDUCATION (3) | 290,000 | 0 | 290,000 |
| MEADOWS | 250,000 | 0 | 250,000 |
| CAMPING | 240,000 | 0 | 240,000 |
| GOLF | 190,000 | 0 | 190,000 |
| BOAT/ WINDSURF | 100,000 | 0 | 100,000 |
| RENTAL FACILITIES (4) | 80,000 | 0 | 80,000 |
| SPECIAL RECREATION (5) | 30,000 | 0 | 30,000 |
| **TOTAL** | **10,245,000** | **3,745,000** | **13,990,000** |

*Average annual park visitation represents the mid-point of high (15.5 million) and low (12.5 million) visitation estimates for 1999.

(1) The use of "Parks" refers to use of all parks and open space, all trails internal to these parks and all recreational facilities associated with them.

(2) Includes general use not specifically associated with any other category.

(3) Includes visits associated with visitor centers only.

(4) Includes use of facilites for meetings, banquet and food services.

(5) Special recreation includes archery, markmanship, model trains and boats.

Sources: Park District Operations Department; Strategy Research Institute; Economic & Planning Systems, Inc.

**Table II-4**
**Land Acquisition by Period (adjusted for inflation)***
**East Bay Regional Park District Economic Study**

| Land Type/Item | 1933-44 | 1945-55 | 1956-66 | 1967-77 | 1978-88 | 1989-2000 | Total |
|---|---|---|---|---|---|---|---|
| Recreation Area | | | | | | | |
| Acres | 44 | 82 | 298 | 805 | 272 | 196 | 1,698 |
| Price | $228,450 | $396,000 | $0 | $3,164,066 | $757,841 | $3,897,955 | $8,444,312 |
| Price/Acre | $5,142 | $4,829 | $0 | $3,930 | $2,789 | $19,888 | $4,974 |
| Regional Park | | | | | | | |
| Acres | 3,647 | 1,379 | 6,229 | 10,390 | 6,576 | 6,980 | 35,201 |
| Price | $10,677,880 | $2,634,102 | $10,311,563 | $44,100,679 | $34,543,997 | $66,318,670 | $168,586,892 |
| Price/Acre | $2,928 | $1,910 | $1,655 | $4,245 | $5,253 | $9,501 | $4,789 |
| Regional Preserve | | | | | | | |
| Acres | 0 | 0 | 3,500 | 13,729 | 12,259 | 9,483 | 38,971 |
| Price | $0 | $0 | $2,900,858 | $21,987,992 | $13,134,556 | $26,961,688 | $64,985,094 |
| Price/Acre | $0 | $0 | $829 | $1,602 | $1,071 | $2,843 | $1,668 |
| Regional Shoreline | | | | | | | |
| Acres | 0 | 0 | 383 | 4,058 | 1,549 | 7,287 | 13,278 |
| Price | $0 | $0 | $0 | $29,253,546 | $12,973,871 | $69,326,546 | $111,553,963 |
| Price/Acre | $0 | $0 | $0 | $7,208 | $8,373 | $9,513 | $8,401 |
| Regional Trail | | | | | | | |
| Acres | 0 | 0 | 0 | 635 | 289 | 1,461 | 2,386 |
| Price | $0 | $0 | $0 | $667,389 | $770,326 | $9,744,690 | $11,182,404 |
| Price/Acre | $0 | $0 | $0 | $1,051 | $2,663 | $6,668 | $4,687 |
| Total | | | | | | | |
| Acres | 3,700 | 1,500 | 10,400 | 29,600 | 20,900 | 25,400 | 91,500 |
| Price | $10,906,000 | $3,030,000 | $13,212,000 | $99,174,000 | $62,181,000 | $176,250,000 | $364,753,000 |
| Price/Acre | $2,948 | $2,020 | $1,270 | $3,350 | $2,975 | $6,939 | $3,986 |

* Historical acquisitions are expressed in terms of current year 2000 purchasing power

Source: East Bay Regional Park District; Economic and Planning Systems Inc.

parkland, and cost. The District's history has been divided into six 11-year phases. The final phase represents the periods since the passage of Measure AA. The implications of this acquisition history are described below.

- Land acquisition has been greater in the last half of the District's existence, with an average of about 25,000 acres acquired each decade, or 2,500 acres each year in this period.

- Maintaining a high level of acquisition activity has become more challenging in recent years as land prices have increased and land suitable and available for acquisition has decreased due to rapid urbanization in the East Bay. In addition, an increasing amount of the District's financial resources are required for operations and maintenance of its expanding land stock. Per acre land prices, which had remained for the most part in the $2,700 to $3,300 range since 1934, increased to $7,000 per acre between 1989 and 2000.

- Measure AA and associated bond proceeds played a key role in maintaining acquisition activity over the last eleven years on par with the prior 22 years. Without the proceeds, the District would not have been able to spend the $176 million required to acquire 25,000 acres of land over this period.

- Since 1967, the District has directed financial resources towards the establishment of a regional shoreline parks system and a regional trails system, while continuing to invest in its regional parks, preserves, and recreation areas. These acquisitions have added a new breadth to the types of parklands provided and the associated recreational activities. Regional trails have been very popular, attracting over 25 percent of all park visits, often from frequent users, and a significant proportion of these visits are walking or biking transit trips. The regional shorelines have also attracted high levels of visitation, as they often are adjacent to more urbanized areas and offer a different type of recreational experience. These regional shoreline parks have also diversified the set of ecosystems preserved by the District.

  In addition, over the last ten years the District has also focussed on purchasing lands adjacent to areas preserved by other entities. This has helped preserve larger contiguous areas of open space of significant environmental value.

# III. EBRPD AND ITS CONTEXT

The East Bay Regional Parks District (EBRPD) was founded with the goal of conserving land for the enjoyment of the District's residents and the environmental quality of the area. At its initiation, the District was only operational in a portion of Alameda County. Since that time, the parkland operated by the District has grown significantly due to land acquisitions and the geographic expansion of the District. It now serves the full two-County area of Alameda and Contra Costa Counties in the East Bay.

As the area served by the District has grown so has the population of these areas changed; the District itself has grown in size and significance, and new opportunities and challenges have arisen. In order to understand the constituency currently served, the benefits currently provided, and the challenges the District will face over the next twenty years, it is important to consider the existing and future context of the District. This chapter provides an overview of these contexts from a demographic and land use perspective, and it highlights some of the challenges that will be faced in the future. It also informs the discussion of the economic benefits of the District presented in **Chapter IV**.

## DEMOGRAPHIC / SOCIOECONOMIC CONTEXT[i,ii]

Demographic and economic growth and change are expected to be pronounced in the next twenty years in the East Bay, much like in the rest of the San Francisco Bay Area and California. The sections below describe the existing context in the East Bay and surrounding counties in terms of levels and locations of population, households and employment, and differentials in household income. It also describes the age and ethnic distribution of the existing East Bay population. Subsequently, it describes projected growth in the East Bay, as estimated by the Association of Bay Area Governments and the California Department of Finance, in terms of how it will add new residents and jobs to the area and change existing age, ethnic, and population location distributions.

### EXISTING CONTEXT

At present the District boundary, Alameda and Contra Costa Counties (the East Bay), includes about 2.4 million persons in 850,000 households, with an average household income of $71,500. About 1.46 million of these District residents live in Alameda County in 515,000 households, with an average household income of $69,000, and about 940,000 live in Contra Costa County in 340,000 households with an average household income of $79,000 (see **Table III-1**).

Most people reside in cities, 2.1 million, while 300,000 people live in unincorporated areas. About 1.3 million persons live in households in cities adjacent to the shoreline, excluding the cities of southern Alameda County, south of Hayward. Another 460,000

**Table III-1**
**Regional Growth, 2000-2020**
**East Bay Regional Park District Economic Study**

| Area | Population | | | | Households | | | | Jobs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | 2020 | Growth | % Change | 2000 | 2020 | Growth | % Change | 2000 | 2020 | Growth | %Change |
| Alameda County | 1,462,700 | 1,671,700 | 209,000 | 14% | 514,620 | 578,830 | 64,210 | 12% | 725,790 | 945,340 | 219,550 | 30% |
| Contra Costa County | 941,900 | 1,169,000 | 227,100 | 24% | 338,860 | 420,740 | 81,880 | 24% | 360,090 | 500,680 | 140,590 | 39% |
| **District Total** | **2,404,600** | **2,840,700** | **436,100** | **18%** | **853,480** | **999,570** | **146,090** | **17%** | **1,085,880** | **1,446,020** | **360,140** | **33%** |
| Santa Clara | 1,736,722 | 2,016,700 | 279,978 | 16% | 566,188 | 664,930 | 98,742 | 17% | 1,077,220 | 1,308,220 | 231,000 | 21% |
| San Joaquin | 566,628 | 821,851 | 255,223 | 45% | 180,531 | 306,353 | 125,822 | 70% | 247,499 | 326,982 | 79,483 | 32% |
| **Other Area Total** | **2,303,350** | **2,838,551** | **535,201** | **23%** | **746,719** | **971,283** | **224,564** | **30%** | **1,324,719** | **1,635,202** | **310,483** | **23%** |

Source: Department of Finance; Association of Bay Area Governments *Projections 2000*; Economic and Planning Systems, Inc.

persons live in inland cities, 320,000 in southern Alameda County cities (Fremont, Newark, and Union City) close to Silicon Valley, and about 300,000 persons live in unincorporated areas throughout the District. Shoreline cities have, on average, lower household incomes than households in other areas of the District.

The East Bay economy also provides over 1 million jobs, 725,000 in Alameda County and 360,000 in Contra Costa County. The majority of these jobs, 645,000, are in shoreline cities, with 260,000 jobs in the inland cities, 130,000 in the southern Alameda County cities, and 50,000 in the unincorporated areas of the County.

The age distribution of District residents includes 690,000, or 29 percent, under 19 years of age, 465,000, or 19 percent, between the ages of 20 and 34, approximately 41 percent between the ages of 35 and 64, and 11 percent over 65 years of age. Ethnically, the East Bay includes 410,000 Asians or Pacific Islanders, 340,000 African Americans, 400,000 Hispanics, 12,000 American Indians, and 1.25 million Whites. The White population represents about 52 percent of the total (see **Table III-2** and **Table III-3**).

A significant proportion of park users, about 24 percent, are non-East Bay residents, and many of these park users are from adjacent counties, including Santa Clara and San Joaquin. These counties currently have populations of 1.7 million and 580,000, respectively. Northern Santa Clara County residents and western San Joaquin County residents are most likely to access District parks.

## FUTURE CONTEXT

The East Bay, similar to the rest of the San Francisco Bay Area, is expected to grow significantly over the next twenty years. A total of 360,000 new jobs are expected to be added over the next twenty years, a 33 percent increase over the entire period or an average annual increase of 1.4 percent. The majority of these jobs, 220,000, will be added in Alameda County, although the proportionate growth will be greater for Contra Costa County. A total of 435,000 new residents will be added over the same period, an 18 percent increase over the entire period or a 0.85 percent annual increase. Just over half of these new residents, 227,000, will reside in Contra Costa County, which will experience a significantly higher percentage of growth at 24 percent over the entire period, relative to Alameda County's 14 percent growth (see **Table III-1**).

Most of the resident and employment growth will be located in shoreline and inland cities. Shoreline cities are projected to add 164,000 new residents and 180,000 new jobs, while inland cities are expected to add 118,000 new jobs and 152,000 new residents. Southern Alameda County cites are expected to add about 45,000 new jobs and residents, while the unincorporated areas are expected to add a significant 76,000 new residents and a less significant 15,000 new jobs.

## Table III-2
## Age Breakdown for Alameda and Contra Costa Counties
## East Bay Regional Park District Economic Study

| Area/Age | Year 2000 | % of Total | Year 2020 | % of Total | % Growth |
|---|---|---|---|---|---|
| District | | | | | |
| 0-19 | 689,400 | 29% | 705,800 | 25% | 2% |
| 20-34 | 464,300 | 19% | 557,000 | 20% | 17% |
| 35-64 | 975,200 | 41% | 1,037,900 | 37% | 6% |
| 65+ | 275,700 | 11% | 540,000 | 19% | 49% |
| **TOTAL** | 2,404,600 | 100% | 2,840,700 | 100% | 15% |

Source: ABAG *Projections 2000*; Economic & Planning Systems, Inc.

## Table III-3
## Ethnic Breakdown of Alameda and Contra Costa Counties
## East Bay Regional Park District Economic Study

| Ethnicity | Year 2000 | % of Total | Year 2020 | % of Total | % Growth |
|---|---|---|---|---|---|
| American Indian | 12,023 | 0.5% | 12,535 | 0.4% | 4% |
| Asian & Pacific | 411,187 | 17.1% | 673,570 | 23.7% | 64% |
| Black | 339,049 | 14.1% | 400,278 | 14.1% | 18% |
| Hispanic | 396,759 | 16.5% | 609,172 | 21.4% | 54% |
| White | 1,245,583 | 51.8% | 1,145,145 | 40.3% | -8% |
| TOTAL | 2,404,600 | 100% | 2,840,700 | 100% | 18% |

Source: Department of Finance Projections; ABAG *Projections 2000*; Economic & Planning Systems Inc.

The absolute number of persons in each age range is expected to increase as population growth occurs over the next twenty years, although the distribution will change significantly in line with average trends for the State and the country as baby boomers age. The number of persons in the 0-19 category is expected to increase only slightly by 15,000, or 2 percent, resulting in a fall in share from 29 percent to 25 percent. Residents in the 20 to 34 age category are expected to grow in line with overall population growth in the District, maintaining their 20 percent share and growing by 90,000 persons, or 20 percent, over their 465,000 base. The largest age bracket with the most people, 35 to 64, is expected to grow only by 62,000 persons, a 6 percent growth, resulting in a fall in share from 41 percent to 37 percent. Most significantly, as baby boomers age, the 65 and over category is expected to almost double, adding about 265,000 persons, and increasing its share from 11 to 19 percent of total population (see **Table III-2**).

Ethnically, the composition of the East Bay will change over the next twenty years. The white population will fall by about 75,000 to 1.17 million, reducing its share from 52 percent to 41 percent. At the same time, the Asian and Hispanic population will both grow by over 50 percent, adding 275,000 and 225,000 persons, respectively, and increasing their shares to 24 and 22 percent of total population. The African American population will grow by 20 percent, the District-wide growth rate, adding 70,000 persons and maintaining its 14 percent share. The American Indian population will grow by 6 percent to 12,800 persons (see **Table III-3**).

In addition, population growth in adjacent counties, the rest of the State, and elsewhere is also expected to grow. In the adjacent counties of Santa Clara and San Joaquin, a total of 261,000 and 240,000 new residents are projected to be added over the next twenty years, respectively. These new residents represent a 15 percent and a 41 percent increase over the existing population base.

## LAND CONTEXT[iii]

As demographic and economic growth continues over the next twenty years, pressures on land will intensify. In response to market demand, new land will be sought for housing, work places, and other development. At the same time, new residents and employees will expect more parks and open space to maintain levels of service and their quality of life. There is, however, only a limited inventory of land to satisfy these increasing and often varied and conflicting land use demands. The sections below describe the existing use of land in general terms and present projections prepared by the Greenbelt Alliance concerning potential future urbanization of land. Actual levels of land urbanization will depend on a number of hard-to-predict factors, including land use policy, open space and farmland preservation efforts, and the levels of infill and brownfield development.

EXISTING CONTEXT

There are about 944,000 acres of land in the East Bay, including 476,000 acres in Alameda County and 467,000 in Contra Costa County. At present, 280,000 acres of this land, about 30 percent, is developed or "urbanized," including 139,000 acres in Alameda County and 141,000 in Contra Costa County. The remaining 660,000 acres are either farmland or open space, some of which will be topographically suitable for development. Much of this land, about 421,000 acres, is considered grazing land, including about 250,000 acres in Alameda County and 173,000 acres in Contra Costa County. About one-third, or 220,000 acres, of this non-urbanized land is protected through development rights ownership, including the 91,500 acres operated by the District. This District land represents about 9.5 percent of all land in the East Bay, and 42 percent of currently protected land. It also includes 57,400 acres of grazing land, which is 14 percent of total East Bay grazing land (see **Table III-4**).

FUTURE CONTEXT

The 435,000 new residents and 360,000 new jobs projected in the East Bay over the next twenty years will lead to a demand for housing, workplaces, recreational facilities, parks, and open space. Some of this growth will be accommodated through infill or brownfield development that will not require additional land development. The Greenbelt Alliance has identified lands that it considers to be of high, medium, and low risk of development, with the level of risk generally referring to the immediacy of land development pressures. Based on these risk assessments and their associated time frames, about 120,000 acres of land or 27 percent of non-urbanized, non-protected land in the East Bay is expected to be at risk of development over the next twenty years. This represents an additional 43 percent of urbanization above existing levels. About 35,000 of these at-risk acres are in Alameda County and 85,000 are in Contra Costa County (see **Table III-4**).

## CHALLENGES TO THE DISTRICT

The growth and changes outlined above will pose new challenges for the region and the District. These challenges are unlikely to be met without significant inter-agency cooperation. Key challenges include the following:

- The need to accommodate future growth will put pressure on limited land resources, challenging the entire region and all entities concerned with environmental quality to preserve key areas of environmental value. It will also lead to new operations, maintenance, and management challenges, as existing parks are increasingly surrounded by new development and as use patterns change.

## Table III-4
## Land Inventory for Alameda and Contra Costa Counties
## East Bay Regional Park District Economic Study

| Land Type (1) | Alameda | Contra Costa | District Total |
|---|---|---|---|
| **2000 Existing Conditions** | | | |
| Urban Land | 138,900 | 141,200 | 280,100 |
| Secure Land | | | |
| District | 49,956 | 41,544 | 91,500 |
| Other | 58,844 | 69,456 | 128,300 |
| Subtotal | 108,800 | 111,000 | 219,800 |
| Other Land | 228,300 | 215,300 | 443,600 |
| **Total** | **476,000** | **467,500** | **943,500** |
| **Future Development, 2000-2020** | | | |
| At Risk from Development (2) (over next 20 years) | 35,250 | 83,250 | 118,500 |
| Other Land: Undeveloped (3) | 193,050 | 132,050 | 325,100 |
| Total Other Land | 228,300 | 215,300 | 443,600 |

(1) Based on Greenbelt Alliance Study, 2000. Land categories include urban, secure, high risk (to be developed in 10 years) medium risk (to be developed in 10-30 years, and low risk (not threatened in near future).
(2) Development over twenty year period based on high risk times one-half medium risk.
(3) Undeveloped land based on total other land minus land at risk from development.

Source: Greenbelt Alliance; Economic and Planning Systems, Inc.

- The new residents and employees in the region, attracted in part by the existing regional quality of life, will expect this quality to be maintained, including the environmental quality as well as the parks and open space levels of service provided by cities, counties, and the District. For illustrative purposes, **Table III-5** shows the additional land required if the District wishes to maintain its current level of service measured by regional parkland per 1,000 population over the next twenty years. As shown, the new 435,000 residents would generate an additional requirement of about 17,000 acres of parkland. Such acquisitions will be more challenging in the future as the supply of suitable parkland diminishes and becomes more fragmented.

- The continued distribution of growth throughout the East Bay will lead to changing geographic demands for local and regional parks and new opportunities to connect areas with regional trails.

- The changing ethnic and age distribution of the population will continue to require and expect a broad and diverse range of recreational opportunities and facilities.

- As development continues and development mitigation is required by state and federal agencies, the District may face the challenge/opportunity of integrating these mitigation lands with its existing holdings and becoming responsible for their operations, maintenance, and management.

## Table III-5
## Park Needs Based on Exisiting Level of Service
## East Bay Regional Park District Economic Study

| Area | Population 2000 | Pop. Growth 2000-2020 | Level of Service (acres/1,000 pop) | Park Acres needed |
|---|---|---|---|---|
| Alameda | 1,462,700 | 209,000 | 34.2 | 7,138 |
| Contra Costa | 941,900 | 227,100 | 44.1 | 10,017 |
| District | 2,404,600 | 436,100 | 38.1 | 17,155 |

Source: East Bay Regional Park District; Economic and Planning Systems, Inc.

# IV. Economic Benefits of the District

This chapter describes the economic benefits provided by the District resulting from the following:

- Land preservation and environmental conservation efforts.
- Provision of recreational opportunities.
- Provision of other public services, including public safety, education, and transit.
- Total direct and net new expenditures in the local economy.

These District functions result in a broad array of benefits that accrue to several different sets of individuals, including:

- District residents
- San Francisco Bay Area residents
- District and San Francisco Bay Area businesses
- Park users, including District residents, other Bay Area residents, and tourists from other parts of California, other states, and other nations
- Recreational goods retailers and wholesalers, and their employees and suppliers
- Concessionaires and food and drink vendors on or close to parklands
- Public sector entities, including School Districts, cities, counties, State and Federal agencies, and other public sector parkland owners
- Property and land owners
- Development community
- Recreational facility construction companies
- Ranchers

The benefits described in detail below and quantified where possible are all, in part, economic, though many benefits also incorporate equity and public policy. The benefits are divided into four key categories, as follows:

A. **Direct Benefits to District Residents, Park Users, and Ranchers:** Includes direct benefits to residents and users through the regional park system's effect on quality of life and economic vitality, property values, user utility, and grazing.

B. **Public Benefits:** Includes benefits to the District's local jurisdictions and the two-County region as a whole in the form of public investment, urban form enhancement, public service provision, and service cost reduction.

C. **Benefits of User Expenditures:** Includes total direct and net new economic activity within the District that are associated with the retail expenditures of park users.

D. **Benefits of District Expenditures:** Includes the effects on the local economy of District expenditures on wages and salaries, supplies, land acquisition, and contracts for recreational facility development.

The evaluation of the economic benefits provided by the District is based on available literature on the different types of benefits provided by parks, open space, and trails. The literature makes clear that some benefits are more easily and accurately quantifiable than others, while the process of quantifying others is contentious in itself. This body of literature was then applied to the details and context of the Park District. The evaluation is presented below by benefit category and by economic benefit.

## BENEFITS TO DISTRICT RESIDENTS, BUSINESSES & USERS

### 1. QUALITY OF LIFE

*District parks, open space, and trails contribute to the high quality of life in the East Bay and the greater San Francisco Bay Area. This high quality of life attracts new and retains existing businesses, driving local and regional economic growth and generating jobs and income for District and other Bay Area residents.*

#### Definition of the Benefit

"Quality of life" is a term that has taken on a broad meaning in urban affairs and planning. It generally refers to the "livability" of an area or region, as defined by a variety of factors, including, but not limited to, public safety, traffic congestion, environmental quality, educational and cultural resources, and recreational opportunities. Quality of life is one of the key elements that drives short-term and long-term—i.e., sustainable—regional economic growth. Areas and regions that ignore the importance of these quality of life factors attract and retain fewer businesses and workers, and, over time, experience lower rates of economic growth in addition to a lower quality of life.

#### EBRPD and Quality of Life

The provision by EBRPD of parks, open space, and trails, and associated recreational and educational opportunities, environmental and cultural preservation, alternative transit modes, and sprawl-limiting characteristics, all contribute positively to the quality of life in the East Bay region. As a result, the attraction and retention of businesses and skilled workers in the East Bay is strong, bolstering the economy and providing broad economic benefits for all area residents.

#### Quality of Life Literature Review

The recognition of quality of life as a determinant of economic growth and prosperity is a "common sense" realization for most people. Living close to or within easy access of parks, open space, and trails means access to a variety of benefits, including recreational opportunities and associated mental and physical health benefits, an aesthetically

pleasing environment, and increased community interaction and cohesion. The opportunity to live close to, pass by, or have easy access to these amenities in addition to the positive environmental features, including higher standards of air quality, water, and shade, attracts businesses and skilled workers.

Quality of life has long been an important feature in determining regional economic growth rates, and its significance is strengthening. As the number of large metropolitan areas expand and markets become more dispersed, regions such as the San Francisco Bay Area and the East Bay increasingly compete for businesses and skilled workers on the basis of quality of life. Quality of life, thus, becomes a key determinant of business attraction, retention, and economic growth.

The literature on the economic impacts of quality of life has shied away from the quantification of increases in economic growth rates associated with different quality of life factors. Instead, it focuses on surveys of business leaders, workers, and the general public to ascertain the importance of quality of life. A number of surveys and studies have been conducted, and some of these results are described below:

- A city's quality of life was found to be more important than purely business-related factors when it comes to attracting new businesses, particularly in the rapidly growing high-tech and service industries. [iv]

- Cities that rank high for quality of life also rank high as best places to locate a business.

- Quality of life for employees was the third most important factor in locating businesses, after access to domestic markets and availability of skilled labor, both of which are influenced by quality of life. [v]

- Owners of small companies ranked recreation, parks, and open space as the highest priority in choosing a new location for their business. [vi]

**Measuring the Regional Park District Benefit**

It is a recognized fact that the San Francisco Bay Area and the East Bay, in particular, enjoy a high quality of life. The area consistently ranks at or close to the top of the list of "bests places to live" both in national and international studies. Not coincidentally, it also ranks high on lists of "best places to do business," especially in high-growth sectors, such as high-tech and biotech, which compete more in terms of quality of life than more traditional industries. While many factors contribute to the high quality of life in the San Francisco Bay Area and the East Bay, surveys of business leaders, workers, and park and trail users clearly establish the importance of parks, open space, and trails to regional quality of life and ultimately to regional economic growth and prosperity.

A number of business and development groups in the San Francisco Bay Area and the East Bay have recently pointed to the importance of open space to quality of life, sustainable development, and the establishment of appealing places to live, work, and play. For example, the Bay Area Alliance in its *Draft Compact for a Sustainable Bay Area*[vii]—as part of its effort to integrate economic prosperity, environmental quality, and social equity—included a list of commitments concerning the preservation and restoration of the region's natural assets, including bay, farmland, open space, other habitats, and air and water quality. Overall, the presence and operation of District parklands enhance quality of life, which in turn supports economic growth that provides jobs and incomes to District and other Bay Area residents.

## 2. PROPERTY VALUES

*District parks, open space, and trails, by increasing the quality of life in the East Bay, enhance the property values of homes throughout the District. In addition, they increase property values of homes adjacent and close to the parklands due to the views and immediate access provided.*

### Definition of the Benefit

Property values reflect the willingness of buyers to pay for property. The willingness to pay for an individual property is a function of a number of variables, including the desirability of the area or region as a whole, the number of alternative properties on the market, the size and features of the property, and its location relative to a variety of positive and negative amenities. Parks, open space, and trails affect property values in the region as a whole, in individual communities, and in directly adjacent areas. To the extent that parks, open space, and trails add to the quality of life in a community and region, economic growth, housing demand, and property values will all be higher. Properties in neighborhoods adjacent to parks, open space, and trails will be more directly affected. Views and access to the outdoors and recreational amenities will enhance property values, while noise, congestion, and undesirable activities may reduce value.

### The Regional Park District and Property Values

EBRPD lands include over 91,000 acres of parks, about 9.5 percent of all the East Bay land area, and over 1,000 miles of regional trails. There are a variety of park types, some with relatively high levels of recreational use and others with limited public access. The recreation areas and trails attract the most intense usage on an annual visitors-per-acre basis. Overall, about 16.5 percent of District land has zoning that permits recreational use, with actual recreational use significantly below this level. These lands are spread throughout Alameda and Contra Costa Counties.

Similarly, the urbanized areas in the District are spread throughout the East Bay, comprising a total of about 280,000 acres—about 30 percent of all land—and including about 850,000 housing units. All these units are within a 15- to 30-minute drive of a regional park, open space, or trail, most are within jurisdictions whose level of park provision is significantly enhanced by the presence of EBRPD lands, amenities, and/or

programs, and many units are located adjacent to or close to District lands. The property values of all these units are thus affected by the presence of parks, open space, and trails.

An accurate estimate of the number of housing units within the viewshed/walking access of parks, open space, and trails is not available and varies significantly by park. Many regional shoreline parks and regional trails are adjacent to a significant level of development, for example, the Lafayette/Moraga trail, where neighborhoods and housing development run the length of the trail. In other cases, there is minimal development adjacent to the park or open space, e.g., Ohlone Wilderness Preserve, which is often an advantage when sensitive environmental resources are present.

In terms of maintenance and safety, over 250 parks operations and maintenance employees and 85 public safety employees, including 50 full-time law enforcement officers, serve the District parklands.

**Property Value Literature Review**

The quality of life impacts of the Regional Park District directly affect the value of property throughout the East Bay. The proportion of property value attributed to a higher quality of life through park availability is, however, very difficult to quantify. As a result, the majority of studies have evaluated the impacts of parks, open space, and trails on adjacent and nearby properties (generally within a less than one-mile radius).

Two primary methodological approaches have been employed, including multi-variant regression analysis—which uses statistical analyses to isolate and measure the impact of parks, open space, and trails on property values—and survey-based assessment, which draws conclusions based on the opinions of landowners and real estate professionals. The results of the evaluations are varied and demonstrate the sensitivity of the impacts to the nature of the amenity, its size and jurisdiction, and its use intensity, access options, and buffering from adjacent uses. They also indicate the importance of perceptions in reaction to proposed parks, open space, and trails, and how initial negative perceptions often improve over time.

In general, the literature suggests that the property value impacts of parks, trails, and open space are most positive when they focus on open space with some recreational access rather than high-use recreational facilities, and provide high levels of security and maintenance. Some of the key findings from both types of evaluation are described below:

- Regional Parks and Open Space Impacts: Regression analyses conducted during the 1970s and 1980s concluded that properties adjacent to large parks and open spaces, with minimal noise, traffic, and user conflicts, derive as much as 30 percent of their value from these amenities, with a general range of 10 to 30 percent. The value attributable to parks and open space drops with distance from these amenities, generally falling to insignificant levels when over one-half mile away (2,500 feet). [viii]

Properties 1,000 feet away tend to derive between 5 and 10 percent of their value from these amenities, with an average overall value contribution in the 5 to 7.5 percent range for all properties within one-half mile. [ix]

- Trail Impacts: Trails, with their higher levels of use, often generate concerns among property owners about their potential negative impacts on property values. Surveys of property owners and real estate professionals, however, have established that trails generally increase a property's value, whether adjacent or nearby. Adjacent properties tend to be more susceptible to the negative impacts from noise or trespassing, although they rarely show overall losses in value. [x]

- Urban/Shoreline Parks: Similarly to trails, parks in urban settings have higher use rates and can be more susceptible to public safety concerns. Property value impact studies have established both positive and negative impacts from these parks, primarily dependent on the levels of maintenance and public safety. [xi]

**Measuring the Regional Park District Benefit**

The EBRPD parks, open space, and trails undoubtedly have a significant impact on property values throughout the East Bay. As comprehensive Geographic Information Systems are developed for the East Bay that include residential units and their proximity to different types of parks and open space, an aggregate quantification of the impact of the park system on property value will be possible. At this time, as described below, many arguments can be made for the positive contribution of the EBRPD to property values in the East Bay, and these arguments are supported by case studies:

- The property value benefits of the EBRPD, like the parks, open space, and trails themselves, are distributed throughout the region, increasing the property values of residential development in both counties and numerous cities.

- The EBRPD lands generate high levels of positive property value impacts due to their preservation of most lands in a natural state with no public access and the high levels of public safety and maintenance provided on accessible lands.

- Based on the literature reviewed above, this level of use, safety, and maintenance puts the property value impacts of EBRPD regional parks and open space in the range of 7.5 to 30 percent for lands adjacent and up to 1,000 feet away. So, for example, a $500,000 home within 200 feet of Tilden Park will attain $75,000 of its value from its proximity to this park, assuming a 15 percent positive park impact. Assuming another 100 homes of a similar nature, the total property value impact on these homes would be $7.5 million.

- Trails and urban parks are used more intensively, though surveys of property owners along the Lafayette/Moraga trail indicate that EBRPD trails add positively to property values. Indeed, 53 percent of nearby owners believed the trail would increase the resale value of their property and 44 percent believed it would have no effect. [x]

## 3. USER UTILITY / SUBSIDY

*Placing a dollar amount on the value obtained from a park visit is challenging, as different users will value their activities and experiences differently. However, a body of literature has developed that has considered this precise question. Applying available data and methodologies to the EBRPD, the total user utility or value from the 14-million park visits each year is estimated at $74 million. About $58 million of this total can be viewed as a user subsidy net surplus, the benefit over and above the amount paid in entrance fees and charges for service. Park surveys, the range of recreational options available and their locations indicate that gross and net user utilities are spread across a broad cross-section of the East Bay population as well as non-East Bay residents.*

### Definition of the Benefit

Parks, open space, and trails generally offer a wide range of recreational options, at zero or below market[1] cost. Every time an individual visits a park they gain a user utility equal to the value they place on the experience. To the extent that these individuals value the experience more than the amount they are required to pay, they gain a "net positive return" on each park visit. The low or no cost entrance fees to most parks, open space and trails also has a positive social equity component, offering recreational opportunities to all, independent of income. This "social equity" component is greater when parks are readily accessible to low and moderate income individuals, either by being located in mixed or low income neighborhoods or when low-cost transit options are available from these neighborhoods to more remote parklands. It is also greater when the range of recreational options is broad and thereby appealing to a cross-section of the population.

### The Regional Park District and User Utility

EBRPD parks, open space, and trails offer a wide range of recreational options, including hiking and biking along designated trails, picnicking at a number of locations, environmental education provided by professional naturalists, and golf and swimming at specific facilities to name just a few. Many parks and their associated recreational options are located within the city boundaries, and some, especially the regional shoreline parks, are located adjacent to culturally diverse and mixed-income neighborhoods. Subsidized para-transit also provides park access to many residents. Furthermore, some recreational opportunities are available free of charge, while others

[1] Market cost represents the fee a for-profit parks provider would charge to cover costs and make a return on investment.

are charged at below market rate, and a few at market rate. For example, hiking in most parks is at no cost, boat launch is $3.00 per boat (below average charges at State parks), and golf charges average $36 per round, equal to or below charges at other comparable privately run, but publicly accessible golf courses. As a result, the majority of park users not only obtain a user utility from park usage (if they did not, they would not visit the parks), but also obtain a "net positive return" on each park visit.

Each visit is different, with different user utilities obtained by different users depending on their personal preferences, the recreational activity they engage in, and the length of visit. These user utilities are gained by all park users, which include Alameda and Contra Costa County residents, East Bay School Districts, scout and other organizations, volunteer and community groups, and other Bay Area residents and tourists.

The Park District currently receives about 14 million visits annually. About 10.25 million of these visits are associated with parklands, including parks, open space, internal trails, visitor centers and the multitude of other associated recreational options, and about 3.75 million with the regional trails (see **Table II-3**). About 10.6 million of the total visits are from users residing within the District's boundaries, and 3.4 million visits are from users residing elsewhere.

The breadth of facilities and activities offered, the no or low cost use fees, the transit options provided in some cases, and the location of parks throughout East Bay ensure that the EBRPD lands and facilities serve a broad cross-section of East Bay residents,[2] including a range of socioeconomic, ethnic, gender, age, and ability groups.

**User Utility Literature Review**

Many studies have been conducted that seek to estimate the value of a park visit to a user. The analysis of these values is made challenging by the fact that there are rarely private sector comparables (the most common method for estimating value) for most park uses, as the private return on a parks system will, in most cases, be insufficient to cover the costs of acquisition, development, and operations and maintenance. Nevertheless, other methods or proxies for value or user utility have been developed.

User utility can be considered as a measure of the total value obtained from a particular activity or experience. A baseline (low) estimate of the value or user utility of an experience or recreational activity can be estimated based on an estimate of transportation costs and the market price of entrance. For example, a baseline estimate of the user utility of a visit to a movie theater could be estimated as the cost of a ticket (the user willingness to pay), plus the per person cost of transportation to the movie and back, with some estimate of the value of the time spent travelling to the theater. Thus, the baseline estimate of user utility from a movie theater visit is about $10.00 or about $5.00 per hour of activity, including $8.00 for the movie ticket plus $2.00 for transit

[2] General park-use studies combined with high- and medium-propensity voter surveys conducted by Strategy Research Institute suggest that 90 percent of East Bay residents visit the parks at least once each year.

related costs. Clearly, this estimate will vary by individual depending on the time and distance spent travelling to the theater and the opportunity cost of the time spent travelling. Furthermore, this represents only the baseline, or minimum, estimate of user utility. Many theater visitors would be willing to pay more than $8.00 for a ticket, but were not required to, and therefore, in reality, obtained more than $10.00 in user utility.

In the case of parks, open space, and trails, however, there is often no market rate entrance fee. As a result, the willingness-to-pay must be estimated through other methods. There are three primary sets of studies that have been conducted to aid in the assessment of the user utility or value of different types of park visits, including the following:

1. The market comparables method examines the amounts that are charged and paid by users to engage in specific recreational activities at specific parks. These charges are considered estimates of willingness to pay.

2. The contingent valuation method surveys actual and potential park users about their willingness to pay to use the resource in a specific manner.

3. The travel cost method estimates travel costs and considers these a minimum estimate of willingness to pay, as users were clearly willing to expend this amount to use the park.

All of these methods are imperfect. Information on charges at parks and the number of users is limited as most parks do not charge for activities such as hiking and biking, or actual charges are well below the willingness to pay. The travel cost method is complicated by the difficulty of estimating the value lost by users when travelling to parks. Surveys are useful, though respondents tend to understate their willingness to pay or object to answering the question as they do not wish to see charges introduced. Despite these-imperfections, studies conducted using these techniques provide a reasonable range of estimates of user utility for different types of activity, as described below.

Market Comparables

Some recreational activities are provided by for-profit private businesses. These charges are the best market comparables, as prices are established based on actual costs of provision and user preferences and demand. Many activities, however, are not provided by the private sector, primarily due to the high costs of startup and operation and low, if any, profit margins. In these cases, the only comparables available are charges at City, County, Regional, State, or Federally operated parks that also, due to their public sector status, tend to offer recreational activities at below market rate. **Table IV- 1** provides a list of EBRPD charges for selected activity types, as well as charges by some other providers.

## Table IV-1
## User Charges at District and Selected Other Facilities
## East Bay Regional Parks District Economic Study

| Activity | Per Person Charge | Provider | Notes |
|---|---|---|---|
| Park Entrance (1) | $4.00 | EBRPD Recreation Areas | |
| | $2.00 | State Parks | State Park fees were recently reduced to $2 for the 2000-2001 season. |
| Swimming | $2.00 | Tilden - Lake Anza | |
| | $2.00 | Lake Chabot | Day use entry fee, average of two people per vehicle |
| | $2.50 | Del Valle | |
| | $2.50 | Commuinty Pool | Includes pools in Oakland, Richmond, Berkeley, and Walnut Creek |
| Equestrian | $40.00 | Chabot Equestrian Center | 2-hour rental |
| Golf | $36.00 | Tilden | Average of weekly and weekend fees |
| | $47.00 | Public Golf Courses (2) | Average of golf courses comparable in degree of difficulty and ammenities (weekend and weekly fees) |
| Boat Rental | $20.00 | Del Valle | 1.5 hour rental, sailboards/canoes |
| Camping (3) | $2.50 | Anthony Chabot | |
| | $3.50 | State Parks | Fees vary by park |
| | $6.00 | KOA Kampgrounds | |
| Fishing | $28.10 | California Dept. of Fish and Game | In-state yearly license fee |
| | $10.25 | | Two-day license |

(1) Park entrance fees/day use fees are associated with the following activities: Hiking, biking, picnicking, walking and use of lakes/rivers.
(2) Includes Chuck Corica Golf Complex, Poppy Ridge Golf Course, The Presidio Golf Course, Sunol Golf & Recreation Area Co and San Ramon Royal Vista Golf Course.
(3) Based on a party of four.

Source: EBRPD; Economic & Planning Systems, Inc.

Willingness-to-Pay Surveys

Willingness-to-pay surveys provide useful estimates of user utility, especially in cases where for-profit businesses do not provide comparable recreational activities. A number of surveys have been conducted over the last forty years and some of their results are presented below.

- Hiking/Biking: Willingness to pay for a visit to a park for walking, hiking, and/or biking falls in the $2 to $7 range, with a $4.50 average value per visit. [xii, xiii]

- Nature Study/Walks: For recreational trips involving bird watching, one study estimated willingness to pay at $40 per trip. [xiv]

- Specialized Recreation: Willingness to pay is significantly higher for specialized recreation, such as boating, windsurfing, and equestrian uses with surveys indicating between $13 and $40. [xii]

- Regional Trails: Willingness to pay tends to be lower for regional trail usage, where use is more frequent, for shorter periods and sometimes as a transit alternative. For example, one study[xi] surveyed users at three different trails throughout the United States concerning their willingness to pay for an annual pass. In all three cases, the average willingness to pay was only $10 each year, despite average annual visits per user of between 30 visits at the low end at Heritage Trail and 130 visits at the high end at the Layfayette/Moraga Trail. These survey results imply a willingness to pay of well below $0.50 per visit. [x]

Travel Costs

The travel cost method, which takes into account the opportunity cost of time as well as the cost of gasoline and vehicle depreciation, estimates one component of user utility. It also represents an absolute minimum estimate of user utility, as even if users state they are unwilling to pay for park use, their user utility must be equal to or greater than their travel costs as otherwise they would not visit the parks. The travel cost method has been the subject of a number of studies. A recent study of the San Joaquin Parkway presented a methodology for estimating travel costs[xv] and has been applied to park users travelling different distances to parks, including 1.5 miles, 3 miles, and 20 miles (see **Table IV-2**). These estimates can be considered as approximations of travel times and costs to regional trails, park visits by local users, and park visits by non-resident users. The 1.5-mile travel distance is based on actual average travel distances to the EBRPD's Lafayette/Moraga regional trail.

**Measuring the Regional Park District Benefit**

The EBRPD parks, open space, and trails offer recreational opportunities to all East Bay residents as well as residents of nearby counties and tourists. The parks, open space, and trails attract use from a wide variety of residents and non-residents, indicating that

**Table IV-2**
**Estimated Travel Costs for EBRPD Users**
**East Bay Regional Parks District Economic Study**

| Item | Regional Trails | Parks - Resident | Parks - Non-resident |
|---|---|---|---|
| Assumptions | | | |
| Distance Travelled One-Way | 1.5 | 3 | 20 |
| Distance Travelled Round Trip | 3 | 6 | 40 |
| Persons Per Car | 2 | 4 | 4 |
| Minutes Per Mile (equals 30 miles per hour) | 2 | 2 | 2 |
| Transportation Cost (Cents/mile) (1) | $0.32 | $0.32 | $0.32 |
| Travel-Time Cost ($/hour) (2) | $11.50 | $23.00 | $23.00 |
| Cost Calculator | | | |
| Travel Time (Minutes) | 6.00 | 12.00 | 80.00 |
| Mile Cost | $0.96 | $1.92 | $12.80 |
| Travel Cost | $1.15 | $4.60 | $30.67 |
| Total Cost | $2.11 | $6.52 | $43.47 |
| Estimated cost per person | $1.06 | $1.63 | $10.87 |

(1) Internal Revenue Service estimate of cost of transportation, includes cost of gasoline and vehicle depreciation
(2) Conservatively assumes $5.75 per hour opportunity cost of travel time per person.

Sources: *Economic Benefits of the San Joaquin River Parkway to the Fresno-Madera Region,* Houser and North; Economic & Planning Systems, Inc.

a large cross-section of East Bay residents are capitalizing on the recreational value offered by the EBRPD. Each park user at each park visit obtains a user utility or value. While the value of this activity or experience will vary by user, average user utilities by activity type are indicated by the body of research described above.

Per person user utility estimates by activity are shown in **Table IV-3** along with the type of estimate on which they are based. Market comparables were used where good data was available, willingness-to-pay survey data was applied where market comparables were not available, and travel cost estimates were applied to certain uses at regional trails where willingness to pay is indicated as very low. Estimates are conservatively low as they do not sum travel costs and willingness-to-pay estimates in most cases and do not incorporate the higher travel costs associated with non-East Bay user visits.

An estimate of total user utility broken down by general land category (parks vs. regional trails) and activity type is shown in **Table IV-4** and is summarized below.

- A conservative estimate of total user utility associated with visits to EBRPD facilities in dollar terms is $74 million each year.

- The majority of this user utility is associated with park usage, $67 million or about $6.50 per visit, and the remainder associated with regional trails use, $7 million or $1.85 per visit.

- User utility is spread across all activity types with the highest overall user utilities associated with activities with the most visits or the highest per visit utility.

- A significant proportion of this user utility will accrue to non-resident users, with $18 million, or 24 percent, representing a low estimate given the proportion of non-resident visits, and the fact that they expend more dollars travelling to use the lands and facilities.

The user subsidy represents the difference between total user utility and the entrance or use charges. At present, the Park District obtains about $5.7 million through use charges, including entrances fees, parking fees, and facility use charges, and concessionaires obtain $10.4 million. As a result, a conservative estimate of the "net return" on park use, the benefit over and above the amount paid for, is about $58 million.

This total and net user utility will be spread across park users. As mentioned above, available park use data suggests that 90 percent of East Bay residents visit the park at least once, obtaining some user utility and user subsidy, while the average resident park user visits the park 5 times each year. The range of facilities offered and the locations of different park and trail locations also suggest a general spread of benefits throughout a cross-section of the East Bay population.

## Table IV-3
## Annual User Utility from Distrit Park and Regional Trail Visits
## East Bay Regional Parks District Economic Study

| Activity Type | Per Visit User Utility | Source/ Notes |
|---|---|---|
| **Parklands** | | |
| WALKING, HIKING, RUNNING, ETC. | $4.50 | Willingness-to-Pay Surveys |
| BICYCLE RIDING | $4.50 | Willingness-to-Pay Surveys |
| DOG WALKING | $2.50 | Compare to Walking, reduced for less avg time. |
| OTHER | $2.50 | Conservative low estimate. |
| PICNIC | $5.00 | District charges, formal group picnic and other |
| FISHING | $4.50 | Assumed equal to walking |
| SWIMMING | $4.50 | Assumed equal to walking |
| EQUESTRIAN | $40.00 | District charges (2-hour rental) |
| ENVIRONMENTAL EDUCATION | $25.00 | Willingness-to-Pay Surveys, reduced to be conservative |
| MEADOWS | $4.50 | Assumed equal to walking |
| CAMPING | $7.50 | Above campground fees, 50 percent above picnicking |
| GOLF | $42.00 | Market Comparables |
| BOAT/ WINDSURF | $20.00 | 1.5 hrs of windsurf rental |
| RENTAL FACILITIES | $7.50 | Average per head charge. |
| SPECIAL RECREATION | $5.50 | Conservative relative to Other Specialized Recreation |
| **Regional Trails** | | |
| WALKING, HIKING, RUNNING, ETC. | $1.25 | Average Travel Cost plus Small Willingness-to-Pay Factor |
| BICYCLE RIDING | $1.25 | Average Travel Cost plus Small Willingness-to-Pay Factor |
| DOG WALKING | $1.25 | Average Travel Cost plus Small Willingness-to-Pay Factor |
| OTHER | $1.25 | Average Travel Cost plus Small Willingness-to-Pay Factor |
| FISHING | $4.50 | Same as Parklands estimate. |
| SWIMMING | $4.50 | Same as Parklands estimate. |
| EQUESTRIAN | $25.00 | Conservatively below Parks estimate. |

Sources: Various Sources; East Bay Regional Parks District; Economic & Planning Systems, Inc.

## Table IV-4
## Annual User Utility from District Park and Regional Trail Visits*
## East Bay Regional Parks District Economic Study

| Activity Type | Parks Visitors | Per Visit User Utility | Parks User Utility | Reg. Trails Visitors | Per Visit User Utility | Reg. Trails User Utility | Total Visits | Total User Utility |
|---|---|---|---|---|---|---|---|---|
| WALKING, HIKING, RUNNING, ETC. | 2,795,000 | $4.50 | $12,577,500 | 1,745,000 | $1.25 | $2,181,250 | 4,540,000 | $14,758,750 |
| BICYCLE RIDING | 785,000 | $4.50 | $3,532,500 | 1,330,000 | $1.25 | $1,662,500 | 2,115,000 | $5,195,000 |
| DOG WALKING | 1,525,000 | $2.50 | $3,812,500 | 425,000 | $1.25 | $531,250 | 1,950,000 | $4,343,750 |
| OTHER (1) | 1,410,000 | $2.50 | $3,525,000 | 135,000 | $1.25 | $168,750 | 1,545,000 | $3,693,750 |
| PICNIC | 1,320,000 | $5.00 | $6,600,000 | 0 | $0.00 | $0 | 1,320,000 | $6,600,000 |
| FISHING | 490,000 | $4.50 | $2,205,000 | 10,000 | $4.50 | $45,000 | 500,000 | $2,250,000 |
| SWIMMING | 450,000 | $4.50 | $2,025,000 | 10,000 | $4.50 | $45,000 | 460,000 | $2,070,000 |
| EQUESTRIAN | 290,000 | $40.00 | $11,600,000 | 90,000 | $25.00 | $2,250,000 | 380,000 | $13,850,000 |
| ENVIRONMENTAL EDUCATION (2) | 290,000 | $25.00 | $7,250,000 | 0 | $0.00 | $0 | 290,000 | $7,250,000 |
| MEADOWS | 250,000 | $4.50 | $1,125,000 | 0 | $0.00 | $0 | 250,000 | $1,125,000 |
| CAMPING | 240,000 | $7.50 | $1,800,000 | 0 | $0.00 | $0 | 240,000 | $1,800,000 |
| GOLF | 190,000 | $42.00 | $7,980,000 | 0 | $0.00 | $0 | 190,000 | $7,980,000 |
| BOAT/ WINDSURF | 100,000 | $20.00 | $2,000,000 | 0 | $0.00 | $0 | 100,000 | $2,000,000 |
| RENTAL FACILITIES (3) | 80,000 | $7.50 | $600,000 | 0 | $0.00 | $0 | 80,000 | $600,000 |
| SPECIAL RECREATION (4) | 30,000 | $5.50 | $165,000 | 0 | $0.00 | $0 | 30,000 | $165,000 |
| **TOTAL** | **10,245,000** | **$6.52** | **$66,797,500** | **3,745,000** | **$1.84** | **$6,883,750** | **13,990,000** | **$73,681,250** |

* User Utility is defined as the value an individual user places on a visit to a park. It represents a perceived value.
(1) Includes general use not specifically associated with any other category.
(2) Includes visits associated with visitor centers only.
(3) Includes use of facilites for meetings, banquet and food services.
(4) Special recreation includes archery, markmanship, model trains and boats.

Sources: Various Studies; East Bay Regional Parks District; Economic & Planning Systems, Inc.

## 4. AGRICULTURAL PRODUCTION

*While there are undoubtedly differing views on the advantages and disadvantages of grazing, the District's policy to permit grazing generates benefits including: (1) $740,000 in gross pasture and range production value each year; (2) the support of the ranching industry as a whole through the creation of larger contiguous areas for grazing uses, and (3) wildland management and fire protection benefits and cost savings.*

### Definition of the Benefit

Preserved parkland and open space can provide several potential benefits to agricultural producers and ranchers. First, as discussed in more detail under the urban form section, by providing buffers to urban development much privately owned land used for agricultural production, including ranching, will be protected from the pressures of urbanization. Second, in permitting use of parkland for agricultural production or ranching, economic opportunities are presented on land that is indefinitely preserved from development. These economic benefits not only apply to the use of the parkland, but also to the broad context of agricultural production in the area by permitting larger-scale operations if preferable. Third, grazing can provide land management services in the form of fire control.

### The Regional Park District and Agricultural Production

The District protects over 91,000 acres in the two-County area, a significant proportion of which lies adjacent to city boundaries. These parklands provide a buffer between urbanization and other privately owned land used for agricultural production. The District permits grazing on 57,400 acres of its own land, offering ranchers economic opportunities on land that is indefinitely protected. This grazing area represents about 14 percent of the total grazing inventory in the East Bay of 420,000 acres.

### Measuring the Benefit

County Agricultural Commissioner's[xvi] reports for the East Bay imply a total gross pasture and range production value of $5.4 million. On a per acre basis, this represents $12.90 per acre across the 420,000 acres considered grazing land by the State Department of Conservation. The District land permitted for grazing will be more productive than the average for the East Bay, as much of the grazing inventory is hilly, remote, and marginal in economic terms. As a result, application of this average value per acre results in a very conservative estimate of gross District pasture and range production value of $740,000 each year (see **Table IV-5**). This estimate does not take into account likely multiplier effects from this production value.

**Table IV-5**
**Grazing Land and Production**
**East Bay Regional Parks District Economic Study**

| Item | Alameda | Contra Costa | Total |
|---|---|---|---|
| Land | | | |
| Total Grazing Land | 248,355 | 173,041 | 421,396 |
| EBRPD Grazing Land | - | - | 57,395 |
| EBRPD Percent of Total | - | - | 14% |
| Gross Value of Grazing Land | | | |
| Gross Value - Pasture & Range | $2,940,000 | $2,500,000 | $5,440,000 |
| Per Acre - Pasture & Range | $11.84 | $14.45 | $12.91 |
| Estimated EBRPD Park and Range Gross Value | | | $740,939 |

Source: Summary of Agricultural Commissioners' Reports 1998-9; Department of Conservation; Economic & Planning Systems, Inc.

# PUBLIC BENEFITS

## 5. ECOSYSTEM SERVICES

*The natural resources conserved by the Park District as passive, undisturbed habitat have significant environmental, social, and cultural value. However, no method exists to accurately measure the breadth and complexity of these benefits. Consideration of the ecosystem services of natural resources, such as flood control, water treatment, and air quality, provides an indication of the significant, and frequently underestimated, economic benefits of preserving natural resources.*

### Definition of the Benefit

Without ecological life-support systems, including breathable air, fresh water, fertile soil, and an amenable climate, communities and their economies would cease to exist and function. While the clearing of natural resources for development in specific locations will not alone create such a dramatic halt to economic growth and prosperity, every time a natural resource is destroyed, the useful "ecosystem services" provided by the natural resources are lost. These ecosystem services may include climate and gas regulation, water supply, erosion control, nutrient recycling, waste treatment, food production, and genetic resources, not including the recreational and cultural value of the resources.

These ecosystem services, and thus the natural resources, have an economic value. Without them, public costs may be incurred through the need for additional wastewater treatment plants, private costs may be incurred through the need for water filtration systems or property damage due to landslides, and the overall quality of life of a region may suffer due to worsening air quality, which, in turn, may reduce economic growth. Decisions concerning the development and depletion of natural resources that do not take account of these factors may end up damaging the regional economy and reducing prosperity, despite the addition of building space and expected increases in property taxes, sales tax, and other public revenues.

### The Regional Park District and Ecosystem Services

The EBRPD serves as provider and custodian of a huge expanse of the region's natural resources. EBRPD lands include a diverse array of land types and species, and the operations and maintenance efforts prevent the degradation of these resources, through activities such as clearing debris from the shoreline, fencing sensitive ecological preserves, and conducting counts of species and rare habitats. Without the preservation and maintenance of these lands, the expanse and quality of the East Bay's natural resource base would contract significantly, and associated ecosystem services would be lost.

EBRPD lands, partnerships, and programs conserve a broad range of habitats and species. These habitat and species provide important ecosystem services. For example, coastal and freshwater wetlands provide significant economic value through disturbance regulation, water supply, and waste treatment services. Lakes also provide important water regulation and supply services. Other valuable ecosystem services include the impact of trees on air quality and watersheds on flood control.

**Ecosystem Services Literature Review**

The literature available on ecosystem services is the purview of ecological economists and is in its relative infancy. The literature has generated a significant amount of debate concerning both the ethics of valuing the environment, the availability of sufficient data to conduct an accurate valuation, and the appropriate way to place a value on something that is not traded. A number of case studies have, however, been conducted seeking to place value on the ecosystem services provided by particular resources in particular areas, and the value of the ecosystem services of natural resources has, on occasion, been demonstrated by considering the replacement cost of certain services. Selected findings from this literature are described below:

- The cost to New York City of building the filtration plant required if upstate watershed lands are developed and their waste treatment ecosystem service is lost is estimated at $6 to $8 billion. This is significantly higher than the cost of buying the watershed lands, estimated at about $1.5 billion.[xvii]

- The estimated annual value of the 27 percent tree cover of the total land area in Atlanta, Georgia, is $15 million. An increase in tree cover to 40 percent is estimated to provide an additional $7 million in value.[xviii]

- Estimates of the economic value of an acre of wetlands range from $50,000 to $200,000 per acre. These estimates include a number of sub-components. One study indicated an average annual water supply value of $20,000 per acre, based on the cost of obtaining water from the next best alternative source. Another study indicated an average annual flood control/storm protection value of about $8,500 per acre, based on both potential damage and replacement cost estimates. [xix, xx]

**Measuring the Regional Park District Benefit**

The EBRPD parks, open space, trails, and shoreline protect a significant set of natural resources. These resources provide the East Bay, adjacent counties, and the region as a whole with several ecosystem services. While it is difficult to value these services quantitatively, their value is clearly high and significant. Both private and public sector decisions concerning development and natural resource depletion should take these ecosystem service values into account. Without the recognition of these ecosystem service values, land use decisions may be made that negatively impact the East Bay and the region, both environmentally and economically.

## 6. URBAN FORM

*The District's provision of regional parks, open space, wildlife habitat, and corridors and recreation facilities are an integral part of the East Bay's urban fabric, providing positive spatial definition and conferring broad benefits to adjoining urban and suburban residents. These open lands have multiple functions and benefits associated with providing scenic backdrops and buffers, passive and active recreational resources, preservation of traditional resource-based land uses such as farming, ranching, and forestry, and the protection of endangered and threatened species. The permanent establishment of an "urban edge" is a public policy objective that has recently become an important aspect of community planning and development. The EBRPD lands, along with other public open spaces, many of which are contiguous with District lands, define urban form throughout the East Bay and, in so doing, contribute to a sustainable future for our cities and towns.*

### Definition of the Benefit

The concept of "urban form" includes consideration of how an urban area is organized and developed internally and also the overall "shape" of area and how it interfaces with surrounding areas. This overall shape and interface has been an important consideration as cities and towns confront growth and development in recent decades. "Sprawl" is the common buzzword describing a condition of ill-defined, jumbled, and inefficient urban land use. Compact urban form, spatial separation of cities and towns, distinct urban edges, and efficient deployment of urban infrastructure and services are land use policies counteracting the tendency toward urban sprawl. Achieving these policies confers many social and economic benefits including creating a sense of community identity, enhancing community health and welfare, reducing costs of public facilities and services, and enhanced property values.

### The Regional Park District and Urban Form

The EBRPD lands have been acquired over the years as the East Bay has grown and developed. The region's land form and topography have historically been the primary determinant of settlement patterns and development, which has been characterized by continuous development of the coastal plains and valleys during the past century. Originally the EBRPD's land acquisitions and park development occurred on the ridges just east of Oakland and Berkeley, creating a permanent "greenbelt" separating these communities from the suburban communities developing east of the main ridgeline. More recently, EBRPD's land acquisitions have been strategically distributed through the entire East Bay, securing hillsides surrounding growing communities, creating regional trails connecting communities, and acquiring shoreline areas for linear public access. At the present time the perimeters of EBRPD lands interface directly with hundreds of miles of urban and suburban development in the East Bay, thus providing a permanent urban edge and defining urban form as well as providing access to open lands and recreation resources and facilities.

**Urban Form Literature Review**

A significant body of literature points to the importance of defined urban form. Under the titles of "Managed Growth," "Sustainable Growth," "New Urbanism," and "Smart Growth" the literature that is materializing from planning, environment, and development entities highlights the costs of sprawl (undefined urban form) and the advantages of compact development and greenbelts. In particular, the literature points to the need for more efficient land use planning and compact (or higher-density and mixed-use) development, which avoids suburban sprawl and centers around the creation of more "livable communities." Key among the benefits of a defined urban form are efficient use of land resources, full use of urban services, greater transportation options, and more human-scale working and living environments.

- A report produced by BankAmerica, the California Resources Agency, Greenbelt Alliance, and the Low Income Housing Fund found that sprawl has a number of negative consequences. The social, environmental, and economic cost of sprawl include higher business costs, a loss of worker productivity, underutilized investments in older communities, a loss of land, species, ecosystem services, and natural beauty, air pollution, and overall a loss in quality of life.[xxi]

- A study conducted by the American Planning Association and Oregon Transportation and Growth Management Program indicated the potential advantages of compact development, including preservation of larger areas of open space, lower developer construction and infrastructure costs due to more efficient site layout, and lower public costs associated with both infrastructure provision and maintenance and the need for open space.[xxii]

- A study by the National Association of Homebuilders provided evidence of the economic as well as environmental advantages of compact development. In case studies, the value of housing in compact development, where development is clustered into smaller areas, preserving adjacent parks and open space, was found to appreciate more quickly than homes in conventional developments.[xxiii]

**Measuring the Benefit**

The benefits of the urban form definition provided by the EBRPD lands can be measured primarily with the "avoided cost" of individual local jurisdictions making such acquisitions themselves and at a time when such acquisitions would be prohibitively expensive. There are also the benefits achieved through creating the urban edge, as noted above, including creating a sense of community identity, enhancing community health and welfare, reducing costs of public facilities and services, and enhanced property values.

The avoided cost is both retrospective and prospective: retrospectively, the historical investments of the EBRPD creating "urban edge" did not have to be made by local governments; prospectively, the EBRPD continues to make acquisitions and cooperate with local governments regarding open space acquisition, thus reducing costs otherwise that would be required to achieve the same benefits.

Using a conservative methodology, the value of the historical investments was assumed to be the average land acquisition cost to the District over last decade in year 2000 dollars of $7,000 per acre. In reality, replacing the urban edge would be significantly more expensive at this point in time, as even if the land were available, the development pressures on land at the urban edge would increase the land cost significantly above average District land acquisition costs, which include much land with little development potential. Defining the exact area of the regional park system that makes up the "urban edge" is difficult, and, for the purposes of this analysis, it is conservatively assumed at about 4,000 acres of regional shoreline (30 percent of total regional shoreline park acres) and an additional 4,000 acres of other parklands (5 percent of other regional parklands). Applying the $7,000 per acre land cost results implies an historical urban edge investment of about $56 million.

The "urban edge" value of prospective investments will depend on the future quantities and locations of District acquisitions. However, even if the annual rate of land acquisition is lower into the future, the Park District will still invest significantly in land acquisition and urban edge definition, as is evidenced by the District's acquisition goals in its Master Plan.

## 7. HEALTH, EDUCATION, PUBLIC SAFETY, AND TRANSIT BENEFITS

*The Park District provides a variety of benefits that accrue to both public sector entities charged with providing a range of services, as well as directly to individual park users and the broader community. These benefits include health benefits through increased exercise, educational benefits through the environmental interpretative programs, public safety benefits through police and fire services and wildland management, and transit benefits through regional trails connecting homes, employment centers, and shops.*

### Definition of the Benefit

Health, education, public safety, and transit benefits are a positive by-product of the provision of well-maintained, secure parkland and trails and associated recreational opportunities and educational programs. Benefits accrue both to individual users and to the public agencies that would otherwise be required to provide these services, or that experience cost savings through the reduced need for service. Public entities that provide benefit include city and county police, health and human welfare departments, and school districts.

**EBRPD and Health, Education, Public Safety and Transit**

District parks, open space, trails, visitor centers and educational programs offer a broad range of opportunities for recreation, transit and education, while their operation and maintenance includes provision of a number of services including public safety services.

Health

Most District park and trail recreational uses involve physical exercise, which improves the user's physical and mental health. While there are other opportunities for exercise in the East Bay outside of the regional parks, the presence of the District, with a its broad array of recreational opportunities, encourages and likely increases the physical exercise taken by the East Bay and other area populations. This physical activity will lead to an improved individual quality of life as well as health expenditure cost savings to individuals and local government. A number of studies have sought to document these cost savings, and the results of two such studies are described below.

- Men's Fitness Magazine reported the results of a theoretical model developed by the Rand Corporation in 1992 that indicated a medical cost saving of $0.30 in year 2000 dollars for each mile walked or ran.[xxiv]

- A Corporate Wellness Study for the City of San Jose conducted in 1988 found that people who exercise regularly have 14 percent lower claims against their medical insurance and spend 30 percent fewer days in the hospital.[xxv]

Education

The District provides a well-respected range of educational programs, operated through six nature/visitor centers by 26 full-time and 24 part-time environmental interpreters. These educational programs are popular with school districts, attracting visits from over 550 schools. The use of these programs provides education that might not otherwise have been available at a significantly subsidized cost. Additional public cost savings may also be induced by the actions of program users whose sensitivity to the environment has been increased.

Public Safety

The District invests significant resources, about $9.5 million annually, in the public safety component of managing and maintaining its lands, including police and fire operations. About 50 full-time law enforcement officers ensure a secure environment throughout the parklands that would otherwise have to be monitored by City or County officers. The presence of these public safety officers in and around the parks also enhances the security of neighborhoods adjacent to the parks. The District's willingness to commit its public safety resources, including law enforcement officers, helicopter, etc., in aid of local jurisdictions in times of crisis has helped in a number of emergencies. Officers also provide public safety services to Water Districts with lands in the East Bay. District maintenance and management of its parklands also improves their security from fire, costs that would otherwise be borne by local jurisdictions.

Transit

The extensive District regional trail system provides environmentally friendly transit corridors and modes, used by thousands of people each year for hundreds of thousand of trips. Regional trails connect neighborhoods with other neighborhoods, employment centers, commercial districts, inter-modal transportation centers, schools, and District, local, and State parks.

The regional trails system includes 330 miles of trails, 210 miles of which are external to regional parklands, and offer both recreational and transit opportunities. Total annual visits to regional trails are estimated at 4 million visits, many of which represent transit uses. The Iron Horse trail, for example, runs 40 miles, not all of it yet developed, and connects 9 cities, 2 counties, and multiple employment centers including Bishop Ranch and Hacienda Business Park. Annual visits are over 1 million, of which about 36 percent, or over 350,000 visits, represent transit trips.[xxvi] Use of the Delta de Anza Regional Trail is even more focussed on transit trips, with 64 percent of visits used for the purposes of transportation.[xxcii]

## 8. REPLACEMENT VALUE

*Replacement value provides an indication of the overall value of the public investment made by the District considered through the narrow measure of the present value of the land. A highly conservative estimate of the replacement value of District land is $960 million. The District actually spent $365 million in year 2000 dollars in acquiring this land.*

### Definition of the Benefit

Replacement value is a valuation method that considers the cost of replacing an asset as an estimate of the value of the asset. In the case of parkland, replacement value is defined as the expense of replacing a park system, or, in other words, creating it from scratch. This approach to valuation is narrow in scope but does provide one simple proxy for asset value.

### The Regional Park District and Replacement Value

The District is an example of an asset that has been acquired over time through strategic and opportunistic acquisitions and would cost significantly more to replace at this point in time. **Table II-4** presented an acquisition history by acreage, park type, and land cost (in 2000 dollars). The most recent half of the District's life has been especially active in terms of land acquisition with an average of 25,000 acres added to the District land stock over the last three 11-year periods, or 2,250 acres each year. As the land under the District's oversight has grown so have operations and maintenance costs, and Measure AA enabled land acquisition to continue at a high rate over the last 11 years. Over time, land costs, adjusted for inflation, have fluctuated around an average of $4,000 per acre, though over the last 11 years they have increased significantly to about $6,900 in 2000 dollar terms.

These land costs do not include all the soft costs involved in land acquisition, including the costs of appraisal, negotiation, and land assembly. Soft costs have added as much as 25 percent to total acquisition costs in some cases. Furthermore, the District has invested significant financial resources in toxics clean-up, habitat restoration, and the construction of recreational and visitor facilities. These investments are also not captured in the land acquisition costs.

**Measuring the Benefit**

Without the District, as discussed in other sections of this report, it is likely that many of the parklands would have been developed, depleting natural resources areas irreversibly and permitting a more dispersed pattern of development. As a result, pure replacement would not be possible, and even partial replacement would require massive land acquisition costs, environment restoration costs, and complex acquisition negotiations and land assembly efforts. Equally, it is important to recognize that the majority of District land is dedicated parkland. Nevertheless, for purposes of this analysis, it is useful to make a conservative estimate of the replacement value of the land in the park system. The estimate presented here does not include the investments in recreational and visitor facilities, nor the value enhancements provided by environmental maintenance over the years. The total value, instead, considers the cost of replacing the land only.

The most recent series of land acquisitions by the District, as shown in **Table II-4**, cost about $7,000 per acre. This provides one indication of land value. In actuality, the District is opportunistic and strategic in its acquisition strategy, often purchasing at below average market rate. In addition, a large proportion of its land acquisitions is open space purchases, generally set away from urban development. This results in a price that is significantly below the cost of purchasing land on the urban edge. Over time, as urbanization has occurred and the East Bay economy grown, not only has the cost of open space land increased, but also the value of much land has acquired a significant speculative value as urbanization has moved outwards, closer to parkland once far from the urban edge. Indeed, vacant developable land on the urban edge can easily cost over twenty times greater than open space land with no significant speculative value.

As a result, it is a very conservative assumption to suggest a replacement value of $10,500 per acre, or only 50 percent over the existing average land purchase price, given the speculative value associated with much of the land, the additional soft costs associated with land acquisition, and the likely environmental restoration costs. This estimate results in a total land replacement value of $960 million, compared to the $365 million invested in land acquisition since the District's inception.

# BENEFITS OF USER EXPENDITURES

## 9. BENEFITS OF USER EXPENDITURES

*The presence of the Park District results in total direct expenditures by park users in the East Bay of about $254 million each year on durable ($213 million) and non-durable ($41 million) goods. About $74 million or 25 percent represent net new direct expenditures in the East Bay economy ($10 million non-durable and $64 million durable) – i.e., total expenditures on all goods in the East Bay are $74 million higher due to the presence of the Park District. The total economic impact of these net new expenditures is $148 million, when multiplier effects are taken into account.*

### Definition of the Benefit

Recreational opportunities, in addition to providing user utility as described above, also induce a series of expenditures in the local economy, including expenditures on durable and non-durable goods and services. Park users, including local residents and tourists, spend money on non-durables, such as gas, food, lodging, and equipment rentals, as well as on durables, such as bikes, clothing, and footwear. Some of these expenditures represent net new expenditures in the local economy that would not have occurred without the presence of the parks, open space, and trails, and others would have occurred in association with a different local recreational activity. These net new expenditures generate net new employment and income, as well as additional expenditures and economic benefits associated with businesses purchasing supplies and workers spending their wages.

### The Regional Park District and Park User Expenditures

EBRPD parks, open space, and trails create a wide range of recreational options, including hiking and/or biking along 1,000 miles of designated regional and internal trails, bird-watching in designated areas, and golf and swimming at specific facilities to name a few. These recreational opportunities attract a wide range of users who demand a range of goods and services from local businesses, including gasoline and transit, food and drink, recreational equipment and clothing, and, in some cases, lodging.

EBRPD attracts users from a variety of locations, including local users, users from adjacent counties, and tourists from further afield. Cafes and restaurants have sprung up along some of the trails, and a plethora of mountain bikes, sportswear, and other recreation stores have opened in the East Bay, in part to serve the users of EBRPD facilities and lands. Gas stations, motels and hotels, restaurants and grocery stores all benefit from the presence and appeal of EBRPD lands and facilities.

Net new expenditures on non-durables will be primarily generated by non-resident visitors. Other net economic benefits will also be derived from retaining residents in the East Bay for their recreational pursuits and associated non-durable expenditures, and

from inducing higher-than-otherwise recreation expenditures on durable goods by East Bay residents. Indeed, the presence of regional parks along with other outdoor amenities in the Bay Area can be viewed as one of the key drivers in the creation of an "outdoors oriented" culture, with its associated expenditures on recreational goods and equipment. As a whole, all these net new expenditures will have direct and multiplier effects, a portion of which will captured by the East Bay economy.

**Park User Expenditure Literature Review**

The park user expenditure literature is based on surveys of park users about their expenditures. The results of these surveys imply a range of expenditures over and above any District charges depending on the nature of the activity and distance traveled. A large proportion of the studies conducted surveyed trails users. Study results are summarized below, with the expenditures per visit or per user given when available in 2000 dollar terms:

- A survey of hiking users of the Pennsylvania State Park system, the lowest spending activity category, estimated a $5.18 per user-day expenditure, including $2.11 on food, $0.66 on transportation, and $0.52 on lodging. About 46 percent of expenditures occurred near the park, 41 percent near the user's home, and 13 percent in transit. [xxviii]

- A study of the 75-mile Crow Wing Canoe Trail estimated $5.69 per user day economic impact. [xxix]

- A study of the Elroy-Sparta bicycle trail found that users spent an average of $20.73 per person per day on trail-related expenditures. [xxx]

- A survey of six rail-trails in Minnesota estimated that users who traveled less than 25 miles to get to the trails spent an average of $0.85 to $3.98 per day depending on the trail visited, while those who traveled over 25 miles spent an average of $74.11 per day. [xxxi] A separate survey of four rail-trails in Minnesota estimated trail users spent $2.51, $10.51, $11.10, and $13.84 per day, depending on the trail. [xxxii]

- A study of nineteen urban and suburban Illinois bicycle trails, ranging in length between 0.75 and 55 miles, found that users spent an average of $3.82 per person per trip, with 53 percent having no expenses and 2 percent spending over $. [xxxiii]

- Moore et al's *The Impact of Rail-Trails* study conducted for the National Parks Service in 1992 considered the EBRPD's Lafayette/Moraga trail. The findings of their study, adjusted into 2000 dollar estimates, imply an average per visit expenditure of $4.85 per person, primarily on food and drink and automobile-related expenditures. [x] Moore et al's study of the Lafayette/Moraga trail also estimated annual per user expenditures of about $140 on clothing, footwear, equipment, and accessories due to the presence of the trail.

As mentioned above, to the extent these direct expenditures are net new, they will also generate net new indirect and induced expenditures, as businesses purchase supplies and workers spend their wages. Studies have been conducted concerning the magnitude of non-durable goods expenditures "multiplier" effects, with a multiplier of 1.0 being a conservative estimate.

**Measuring the Regional Park District Benefit**

The studies above provide an indication of expenditures by park users. Most of these studies focus on trails, though each of the trails are different in nature, some being located more closely to development while others running through undeveloped areas of natural beauty. The results of the Moore et al study for the Lafayette/Moraga trail are comparable with the results of the other studies, and probably offer a conservative estimate of per visit expenditures on non-durable goods for the EBRPD as use times are generally less than for other park visits. For durable goods, the estimates of trail-induced expenditures may be above average for Park District users. Lafayette/Moraga trail users likely spend more than other general park users as their usage is significantly more frequent, but less than specialized recreation users whose equipment is more expensive to purchase and maintain. An estimate of $100 expended on durables per user each year due to the presence of the regional parks and trails is conservative. Based on these assumptions and applying them to visits across the entire regional parks system, the following economic impact estimates can be drawn.

Non-Durables

- Applying an average per visit expenditure on non-durable goods of $4.85 per visit to the estimated 14 million annual visits generates a total direct expenditure estimate of $68 million.

- Of this amount, about 60 percent or $40.75 million are estimated to occur in the East Bay, based on the Moore et al study and an EPS adjustment to expend the zone of capture from Contra Costa County to the East Bay.

- The proportion of non-East Bay resident users of EBRPD land and facilities is about 24 percent. This proportion can serve as an approximation of the proportion of expenditures in the East Bay that are net new—i.e., that would not occur without the parks system—and result in a net new direct expenditure estimate on non-durable goods in the East Bay of about $10 million. Applying a 1.0 multiplier implies total net new expenditures on non-durable goods in the East Bay of $20 million each year, due to the presence of the EBRPD.

Durables

- Applying an average annual per user expenditure on durable goods of $100 to the estimated 2.8 million users each year generates a total direct expenditure estimate of $280 million. About 76 percent or $213 million are spent by East Bay residents and $67 million by non-East Bay Residents.

- Given the East Bay's specialization in recreation/sporting goods stores and the location of the regional parklands in the East Bay, it is reasonable to assume that 95 percent of East Bay user and 50 percent of non-East Bay user park-related durable goods expenditures are captured by East Bay stores. This implies a capture of $236 million in the East Bay, with $202 million in East Bay residents' expenditures and $34 million in non-resident expenditures.

- The presence of the park system induces significant expenditures on durable outdoor-recreation goods. The expenditures associated with non-residents, $34 million, can be assumed to be net new as without the park system this disposable income would have been spent either on a different set of goods or on a similar set of goods in a different location. Net new expenditures by East Bay residents are less clear. Without the parks system, there would be fewer expenditures on outdoor-recreation goods and a greater proportion of expenditures would occur outside the East Bay. However, much of the disposable income would be expended anyway, possibly on a different set of goods, and, in part, in the East Bay. As a result, a conservative estimate of net new expenditures by East Bay residents is 15 percent of all East Bay resident expenditures in the East Bay, 15 percent of $202 million, or $30 million. As a result, net new direct expenditures total $64 million.

- In total about $64 million in net new direct expenditures on durable goods occur in the East Bay due to the presence of the Park District. Applying a 1.0 multiplier, implies total net new expenditures on durable goods in the East Bay of $128 million each year.

# BENEFITS OF DISTRICT EXPENDITURES

## 10. BENEFITS OF DISTRICT EXPENDITURES

*The District currently spends about $80 million each year, including $59 million on operations and maintenance ($45 million on personnel and $14 million on supplies and services) and about $21 million on capital expenditures ($13.7 million on land acquisition and $7.3 million on capital improvements). A total of 540 permanent employees work for the District as well as an additional 215 seasonal employees.*

*The majority of these expenditures are funded through local taxation and, as a result, only represent a net new benefit to the extent that the Park District focuses its expenditures more in the East Bay than the average set of household expenditures. However, the non-local grants and the District and concessionaire charges for services paid by non-residents represent net new expenditures in the East Bay economy – i.e., without the presence of the Park District these expenditures would occur elsewhere. This net new direct expenditure represents about $9.1 million each year, including $3.9 million in charges for services paid by non-residents and $5.2 million in non-local grant funding. Accounting for multiplier effects, the total net new impact on the East Bay economy is about $18.2 million each year.*

### Definition of the Benefit

Public expenditures in a local economy generate a series of direct and multiplier (indirect and induced) impacts in the local economy. Direct impacts include the output, income, and employment generated by these expenditures. Indirect impacts include the expenditures of businesses, responding to direct demand, on inputs into production, such as parts and supplies. Induced impacts include the expenditure of incomes by new employees on goods and services, and the continued recycling of these expenditures through the economy.

The consideration of the net new economic impact of local agency expenditures must consider the sources of funds for expenditures. The expenditures of funds from local taxation are unlikely to have a significant net impact on the local economy, as without the taxation a significant portion of these funds would also have been spent in the local economy. However, expenditures of funds from outside sources, such as non-local resident payments for charges for service and State and Federal grants, will have a net new positive economic impact.

### The Regional Park District and Agency Expenditures

District revenues are spent on a variety of items, including personnel, supplies and services, land acquisition, and capital development projects. A large proportion of these expenditures is funded through property tax receipts and, thus, while they do result in a direct impact on the local economy, they do not represent a net increase in expenditures in the local economy. Rather, they act more to redirect a set of expenditures. The

proportion of expenditures, however, that are funded through non-resident program-related expenditures and non-local grants do represent net new expenditures and, as a result, will have a net new economic impact on the local economy.

**Local Agency Expenditure Impacts Literature Review**

Local agency expenditure impact studies form a subset of the economic impact literature. The key distinction, recognized by the literature, between private and public expenditure impacts is that analyzing public expenditure impacts requires consideration of the source of the revenue being expended. If expenditures are funded through local taxation then the net economic impact will be less. This source of revenue issue can be addressed by looking at the sources and uses statement of the government entity, while the multiplier, an innately approximate measure, can be based on prior analyses of public expenditure multipliers. Prior studies of public expenditure multipliers vary, with a conservative estimate being 1.0.

**Measuring the Benefit**

EBRPD spends the revenues it collects through its property tax assessment, bond issuance, program charges, grants, and other funding sources on a range of items, including employee salaries, equipment and supplies, and park land acquisition, improvements, and maintenance. The direct expenditures, the net new direct expenditures, and the total net new economic impacts associated with the District are described below:

- Operations and maintenance expenditures cover personnel, supplies, and services (see **Table IV-6**) and total $59 million each year. Expenditures include $45.3 million on personnel and $13.7 million on supplies and services.

- Operations and maintenance funding is primarily through taxes and assessment, $53.5 million or 86 percent, with $5.7 million from charges for services and the remainder from other sources.

- Concessionaires obtain an additional $10.4 million in entrance fees and charges for services, which implies total charges for service of $16.1 million. About 24 percent, or 3.9 million, is associated with non-resident users, and, therefore, represents net new expenditures.

- Capital expenditures cover land acquisition costs and capital development projects (see **Table IV-7**) and total $21 million each year. About 25 percent of the revenues, or $5.2 million, are from grants, primarily non-local, State grants, and represent net new expenditures. The remainder of the revenue is from bond issuances, 59 percent, and District or other sources, 16 percent.

- As a result, total direct District expenditures, including O&M and capital expenditures, total $80 million each year, of which about $9.1 million or 11 percent are net new expenditures. Based on a conservative multiplier of 1.0, the total economic impact of net new expenditures is $18.2 million each year.

**Table IV-6**
**Operations and Maintenance 2000 Budget Overview**
**East Bay Regional Parks District Economic Study**

| Item | General Fund | Special Revenue Fund | Total | % of Total |
|---|---|---|---|---|
| Revenues | | | | |
| Taxes & Assesment Charges | $48,955,000 | $4,487,214 | $53,442,214 | 86% |
| Charges for Services | $5,679,604 | $5,000 | $5,684,604 | 9% |
| Interest | $1,100,000 | $47,928 | $1,147,928 | 2% |
| Rents and leases | $980,089 | | $980,089 | 2% |
| Miscellaneous | $572,291 | $597,000 | $1,169,291 | 2% |
| Total Revenues | $57,286,984 | $5,137,142 | $62,424,126 | 100% |
| Expenditures | | | | |
| Personnel services | $41,597,144 | $3,723,014 | $45,320,158 | 72% |
| Supplies and services | $12,206,171 | $1,492,438 | $13,698,609 | 22% |
| Operations and Maintainence Subtotal | $53,803,315 | $5,215,452 | $59,018,767 | 94% |
| Capital Outlay | $1,770,352 | $127,062 | $1,897,414 | 3% |
| Debt Service | $1,734,635 | $0 | $1,734,635 | 3% |
| Captial Subtotal | $3,504,987 | $127,062 | $3,632,049 | 6% |
| Total Expenditures | $57,308,302 | $5,342,514 | $62,650,816 | 100% |

Source: EBRPD; Economic & Planning Systems, Inc.

**Table IV-7**
**Capital Program Expenditures (in thousands) and Funding Sources***
**East Bay Regional Parks District Economic Study**

| Funding Source | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | Average Annual | % of Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Capital Development Projects | | | | | | | | | | |
| District/Other | $517 | $1,153 | $1,193 | $1,537 | $1,547 | $3,071 | $2,030 | $2,147 | $1,649 | 23% |
| Bond | $1,426 | $7,094 | $4,581 | $2,779 | $1,685 | $2,492 | $1,311 | $6,017 | $3,423 | 47% |
| Grants (1) | $654 | $5,153 | $1,848 | $358 | $1,109 | $1,902 | $1,973 | $4,647 | $2,206 | 30% |
| **Total** | $2,597 | $13,400 | $7,622 | $4,674 | $4,341 | $7,465 | $5,314 | $12,811 | $7,278 | 100% |
| Land Acquisitions Projects | | | | | | | | | | |
| District/Other | $3,308 | $1,462 | $825 | $3,228 | $426 | $26 | $2,258 | n/a | $1,648 | 12% |
| Bond | $12,953 | $11,815 | $10,649 | $9,692 | $8,467 | $3,938 | $6,022 | n/a | $9,077 | 66% |
| Grants (1) | $1,149 | $300 | $9,182 | $3,802 | $4,307 | $1,382 | $950 | n/a | $3,010 | 22% |
| **Total** | $17,410 | $13,577 | $20,656 | $16,722 | $13,200 | $5,346 | $9,230 | n/a (2) | $13,734 | 100% |
| All Projects | | | | | | | | | | |
| District/Other | $3,825 | $2,615 | $2,018 | $4,765 | $1,973 | $3,097 | $4,288 | n/a | $3,297 | 16% |
| Bond | $14,379 | $18,909 | $15,230 | $12,471 | $10,152 | $6,430 | $7,333 | n/a | $12,500 | 59% |
| Grants | $1,803 | $5,453 | $11,030 | $4,160 | $5,416 | $3,284 | $2,923 | n/a | $5,216 | 25% |
| **Total** | $20,007 | $26,977 | $28,278 | $21,396 | $17,541 | $12,811 | $14,544 | n/a (2) | $21,012 | 100% |

* Note: Numbers shown represent funding sources, in general funds are spent as appropriated.
(1) Majority of grants from state and federal sources, only a small proportion come from local sources.
(2) Data not available until year end.

Source: EBRPD; Economic & Planning Systems, Inc.

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Economic &
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*Public Finance*
*Real Estate Economics*
*Regional Economics*
*Land Use Policy*

# APPENDIX A:

# PARK VISITOR ESTIMATION

# APPENDIX A: PARK VISITATION ESTIMATES

Estimating visitation to the regional park systems is a challenging task, especially for the East Bay Regional Park District, where the size and number of parks is large, the number of visits high, and the range of activities and entry points expansive. This appendix describes the effort undertaken by EPS to estimate a range for the total number of visits to District lands and facilities based on available data. A mid-point of this range was used as the basis for quantifying some of the economic benefits discussed in the body of this report. As new efforts are undertaken over time to study visitation across all District regional parks and trails, measurement precision will increase and the range will be refined.

Visitor estimation was conducted in two stages. In the first stage, a visitation range estimate was developed based on two separate approaches, each based on a distinct set of park visitation data. These sets of data included (1) park unit manager visitation estimates provided through interviews and written documentation on estimating methods, and (2) user studies and voter surveys on the propensity of East Bay and non-East Bay residents to visit District land and facilities, conducted by Strategy Research Institute. In the second stage, these estimates were broken out between activity types based on actual use data and park unit manager estimates. The sections below summarize the methodology and findings.

## TOTAL VISITATION RANGE

### PARK UNIT MANAGER ESTIMATES

Park unit managers use a variety of methods to estimate park visitation. The method used depends on the type of park, the number of entrance points, the collection of entrance fees, the presence of parking areas, types of recreational activities, and the presence of "counting technologies" such as pneumatic car counters. Park unit managers generally started with a base set of measurable data, such as cars in parking lots or visitors entering through one particular gate, and then extrapolated this data to estimate total park visitation by making assumptions about other parking options or the frequency of entrance through other gates. This data was supplemented by spot checks, where park personnel would count visitors in particular parts of the park at particular times.

These visitation estimates are, by nature, approximate. Visitation at some parks is easier to estimate than others. Based on the factors used by park unit managers to estimate visitation at each park—such as entrance counts or parking lots—and based on the complexity of measurement—due to multiple entrances, large park areas, and large numbers of visitors—park visitation estimates were assigned an estimating precision level of confidence. **Table A-1** shows the total unit manager visitation estimate of 15.4 million visits broken down by park types and by level of confidence.

While park unit manager estimates are approximate and may over- or underestimate visitation, for the purposes of this visitation analysis, which seeks to be conservative, it is assumed that this 15.4-million visitation estimate represents a high estimate. In order to produce a low estimate, EPS assigned a percentage reduction to visitation estimates in each estimating precision level of confidence category. As shown in **Table A-2**, the reduction applied varied between 0 and 30 percent and resulted in a low total visitation estimate of 12.5-million visits.

## USER STUDIES / VOTER SURVEY-BASED ESTIMATES

An estimate of the total visitation range was derived using measures of the number of annual District park users, both East Bay residents and non-residents, and measures of the propensity of these park users to visit the park system in one year. These measures were based on District user studies, District voter surveys, and other park-use studies. This approach is described below, and associated high- and low-visitor estimates are shown in **Tables A-3** and **A-4**.

High– and medium-propensity East Bay resident voters conducted by Strategy Research Institute indicated that 89 percent of high-propensity voters and 92 percent of medium-propensity voters visited the regional park system at least once in the last year. Other park studies have indicated that low-propensity voters and non-voters tend to visit parks in general more often than medium- and high-propensity voters do. As a result, an 89 percent assumption concerning East Bay resident visitation to the regional park system was considered a reasonable estimate. Given the current total East Bay population of about 2.4 million, this assumption implies a total of 2.14 million East Bay resident park system users each year.

The Longitudinal Monitoring Study, a study of park users of a number of regional parks and trails also conducted by Strategy Research Institute, indicated that about 24 percent of park users were non-East Bay residents. Applying this estimate to East Bay resident users indicates a total of 675,000 non-resident users, and a grand total of 2.81 million park users each year.

Two differing sources of information were available on the number of visits each year per user. The Longitudinal Monitoring Study indicated that 61 percent of users visit the park system over five times each year, 15 percent visit between two and four times each year, and 24 percent visit one time each year. Under these assumptions, the total number of visits is 15.65 million each year, for an average of 5.6 annual visits per user (see **Table A-3**). A conservative interpretation of the survey of high-propensity voters, however, suggested a lower frequency of visits. These indications of visitation frequency, denoted through survey responses of "often," "sometimes," "rarely," and "never," implied that 33 percent of users visit the park system over five times each year,

48 percent visit between two and four times each year, and 20 percent one time each year. Under these assumptions, the total number of visits is 11.9 million, for an average of 4.2 annual visits per user (see **Table A-4**).

### TOTAL VISITATION RANGE

The similarity in estimated ranges between the two methods described above meant that selecting a low and high estimate for visitation was relatively straightforward. The range selected was between 12.5 million visits and 15.5 million visits, for a mid-point of 14 million visits. This range approximately reflects both sets of estimates. The low range is somewhat above the low estimate under the user-study/voter-survey approach. The assumptions behind this estimate were considered to be highly conservative.

## VISITATION BY ACTIVITY TYPE

The division of these estimates of total visitation between activity types was based on data from a number of sources. The primary sources of data were actual data on park use as recorded by, for example, golf rounds, facility rentals and camping reservations, and the park unit manager visitor estimates of park use by activity. The implied proportionate visits by activity type were then adjusted based on trail use studies conducted by the District, which tracked the proportion of users by different activities, and the Longitudinal Monitoring Study, which also provided a break down of park users by activity type. These adjustments were primarily made to the break down between the harder-to-measure uses for which no precise measures were available such as walking, biking, and dog walking.

These proportions were then applied to the total low and high estimates of visitation to obtain actual estimates of visitation by park use. These estimates are shown in **Table A-5** and **A-6**, and mid-point estimates—those used to quantify economic benefits—are shown in **Table A-7**. Visitation estimates for certain activities, where actual user counts were available or visits were easier to measure, were held constant under both the low and high estimates. These activities included equestrian, environmental education, camping, golf, boating and windsurfing, and rental facilities.

## Table A-1
## Annual Park Visitation Park Unit Manager Estimates - High Estimate *
## East Bay Park District Study

| Estimating Precision | Visitor Centers | Regional Trails (2) | Shoreline Parks | Other Parks | Total |
|---|---|---|---|---|---|
| High (1) | 325,000 | 450,000 | 2,000 | 915,000 | 1,692,000 |
| Medium (1) | 0 | 0 | 2,352,000 | 2,342,000 | 4,694,000 |
| Low (1) | 0 | 3,761,000 | 42,000 | 1,925,000 | 5,728,000 |
| Uncertain (1) | 0 | 0 | 3,324,000 | 0 | 3,324,000 |
| **Total** | **325,000** | **4,211,000** | **5,720,000** | **5,182,000** | **15,438,000** |

* Visitation estimates by park provided by unit managers.

(1) Precision measurements defined as:

| | |
|---|---|
| High | Park visitation estimate is primarily measurable. |
| Medium | Park visitation estimate is based on extrapolation of vehicle counts or spot counts. |
| Low | Estimates either based on general observation/ minimal data. or estimating technique was not available |
| Uncertain | Refers to certain shoreline parks whose visitation was estimated based on vehicle or spot counts, but due to the intensity of use and multiple entry points visitation is very uncertain. |

(2) Inclusion of majority of regional trails in "Low" category is conservative, as estimated use on many trails appears to be supported based on time point useage estimate evaluation.

Sources: Park District Operations Department; Economic & Planning Systems, Inc.

## Table A-2
## Annual Park Visitation Park Unit Manager Estimates - Low Estimate *
## East Bay Park District Study

| Estimating Precision | Visitor Centers | Regional Trails | Shoreline Parks | Other Parks | Total |
|---|---|---|---|---|---|
| High (1) | 325,000 | 450,000 | 2,000 | 915,000 | 1,692,000 |
| Medium (1) | 0 | 0 | 2,116,800 | 2,107,800 | 4,224,600 |
| Low (1) | 0 | 2,820,750 | 31,500 | 1,443,750 | 4,296,000 |
| Uncertain (1) | 0 | 0 | 2,326,800 | 0 | 2,326,800 |
| **Total** | **325,000** | **3,270,750** | **4,477,100** | **4,466,550** | **12,539,400** |

* Visitation estimates by park provided by unit managers. Conservatively adjusted downwards to derive low estimate, based on level of precision.

(1) See Table A-1 for definiton of levels of precision. Downward adjustments were as follows;

| | | |
|---|---|---|
| High | 0% | reduction |
| Medium | 10% | reduction |
| Low | 25% | reduction |
| Uncertain | 30% | reduction |

Sources: Park District Operations Department; Economic & Planning Systems, Inc.

**Table A-3**
**Annual Park Visitation Macro-Evaluation - High Estimate ***
**East Bay Park District Study**

| Item | Source | Notes | % of Total | Total # |
|---|---|---|---|---|
| **Park Visitor Estimate** | | | | **15,650,000** |
| User Visitor Frequency | | Assumptions | | |
| 1st Visit | LMS Survey, 1999 | Visit 1 time per year | 15% | 421,454 |
| 1 Visit per Year | LMS Survey, 1999 | Visit 1 time per year | 9% | 252,873 |
| 2-4 Visits per Year | LMS Survey, 1999 | Visit 3 times per year | 15% | 421,454 |
| 5+ Visits per Year | LMS Survey, 1999 | Visit 8 times per year | 61% | 1,713,914 |
| Total Visits | | | 100% | 2,809,695 |
| Visits by User Frequency Group | | | | |
| 1st Visit | Implied by LMS Survey, 1999 | | 3% | 421,454 |
| 1 Visit per Year | Implied by LMS Survey, 1999 | | 2% | 252,873 |
| 2-4 Visits per Year | Implied by LMS Survey, 1999 | | 8% | 1,264,363 |
| 5+ Visits per Year | Implied by LMS Survey, 1999 | | 88% | 13,711,311 |
| Total Visits | | | 100% | 15,650,000 |
| Weighted Average Visits per User | Calculated | | | 5.6 |
| User Estimates by Residence | | | | |
| Total User Estimate | See Above | | | 2,809,695 |
| Alameda/ Contra Costa Resident Users | LMS Survey, 1999 | | 76% | 2,135,368 |
| Non-Resident Users | LMS Survey, 1999 | | 24% | 674,327 |
| Total Users | | | 100% | 2,809,695 |
| **Summary** | | | | |
| Park Visit Estimate | | | | 15,650,000 |
| Average Visits per Year | | | | 5.6 |
| District Resident Park User Estimates | | | | 2,135,368 |
| Total District Residences | | | | 2,400,000 |
| **% of District Residences who are Park Users ** ** | | | | **89.0%** |

* High estimate is supported by LMS survey data which report a high percentage of frequent users.
Also based on conservative assumption that 89 percent of residents are park users.
** 89 percent represents a conservative estimate of proportion of residents that use regional parks and trails.
Survey of high propensity voters implies 11 percent of these voters never use regional parks or trails.
Other studies suggest a lower proportion of lower propensity voters and apartment dwellers
never use the parks and trails.

Sources: East Bay Regional Parks District; Strategy Research Institute; Economic & Planning Systems, Inc.

**Table A-4**
**Annual Park Visitation Macro Evaluation - Low Estimate ***
**East Bay Park District Study**

| Item | Source | Notes | % of Total | Total # |
|---|---|---|---|---|
| **Park Visitor Estimate (1)** | | | | **11,940,000** |
| User Visitor Frequency | | Assumptions | | |
| 1st Visit | LMS Survey, 1999 | Visit 1 time per year | 10% | 268,492 |
| 1 Visit per Year | LMS Survey, 1999 | Visit 1 time per year | 10% | 268,492 |
| 2-4 Visits per Year | LMS Survey, 1999 | Visit 3 times per year | 48% | 1,358,254 |
| 5+ Visits per Year | LMS Survey, 1999 | Visit 8 times per year | 33% | 916,032 |
| Total Visits | | | 100% | 2,811,270 |
| Visits by User Frequency Group | | | | |
| 1st Visit | Implied by LMS Survey, 1999 | | 2% | 268,492 |
| 1 Visit per Year | Implied by LMS Survey, 1999 | | 2% | 268,492 |
| 2-4 Visits per Year | Implied by LMS Survey, 1999 | | 34% | 4,074,762 |
| 5+ Visits per Year | Implied by LMS Survey, 1999 | | 61% | 7,328,254 |
| Total Visits | | | 100% | 11,940,000 |
| Weighted Average Visits per User | Calculated | | | 4.2 |
| User Estimates by Residence | | | | |
| Total User Estimate | See Above | | | 2,811,270 |
| Alameda/ Contra Costa Resident Users | LMS Survey, 1999 | | 76% | 2,136,565 |
| Non-Resident Users | LMS Survey, 1999 | | 24% | 674,705 |
| Total Users | | | 100% | 2,811,270 |
| **Summary** | | | | |
| Park Visit Estimate | | | | 11,940,000 |
| Average Visits per Year | | | | 4.2 |
| District Resident Park User Estimates | | | | 2,136,565 |
| Total District Residences | | | | 2,400,000 |
| **% of District Residences who are Park Users ** ** | | | | **89.0%** |

* Low estimate is supported by high/ moderate propensity voter survey data which provide a conservative estimate of user visit frequency. Conservatively assumed that "often" response means 5+ visits per annum, "sometimes" response 2-4 visits per annum, and "rare" 1 visit per annum. Also based on conservative assumption that 89 percent of residents are park users.
** 89 percent represents a conservative estimate of proportion of residents that use regional parks and trails.
Survey of high/moderate propensity voters implies 11 percent of these voters never use regional parks or trails.
Other surveys suggest a lower proportion of lower propensity voters and apartment dwellers
never use the regional parks and trails.

Sources: East Bay Regional Parks District; Strategy Research Institute; Economic & Planning Systems, Inc.

## Table A-5
## Annual Park Visitation - High Scenario
## East Bay Park District Economic Study

| Activity | Parks Visitors | Trails Visitors | Total Visitors |
|---|---|---|---|
| WALKING, HIKING, RUNNING, ETC. | 3,100,000 | 1,970,000 | 5,070,000 |
| BICYCLE RIDING | 870,000 | 1,500,000 | 2,370,000 |
| DOG WALKING | 1,690,000 | 480,000 | 2,170,000 |
| OTHER (1) | 1,560,000 | 150,000 | 1,710,000 |
| PICNIC | 1,460,000 | 0 | 1,460,000 |
| FISHING | 540,000 | 10,000 | 550,000 |
| SWIMMING | 500,000 | 10,000 | 510,000 |
| EQUESTRIAN | 290,000 | 90,000 | 380,000 |
| ENVIRONMENTAL EDUCATION (2) | 290,000 | 0 | 290,000 |
| MEADOWS | 280,000 | 0 | 280,000 |
| CAMPING | 240,000 | 0 | 240,000 |
| GOLF | 190,000 | 0 | 190,000 |
| BOAT/ WINDSURF | 100,000 | 0 | 100,000 |
| RENTAL FACILITIES (3) | 80,000 | 0 | 80,000 |
| SPECIAL RECREATION (4) | 30,000 | 0 | 30,000 |
| **TOTAL VISITATION** | **11,230,000** | **4,210,000** | **15,440,000** |

(1) Includes general use not specifically associated with any other category.
(2) Includes visits associated with visitor centers only.
(3) Includes use of facilites for meetings, banquet and food services.
(4) Special recreation includes archery, markmanship, model trains and boats.

Sources: Park District Operations Department; Strategy Research Institute; Economic & Planning Systems, Inc.

## Table A-6
## Annual Park Visitation - Low Scenario
## East Bay Park District Economic Study

| Activity | Parks Visitors | Trails Visitors | Total Visitors |
|---|---|---|---|
| WALKING, HIKING, RUNNING, ETC. | 2,490,000 | 1,520,000 | 4,010,000 |
| BICYCLE RIDING | 700,000 | 1,160,000 | 1,860,000 |
| DOG WALKING | 1,360,000 | 370,000 | 1,730,000 |
| OTHER (1) | 1,260,000 | 120,000 | 1,380,000 |
| PICNIC | 1,180,000 | 0 | 1,180,000 |
| FISHING | 440,000 | 10,000 | 450,000 |
| SWIMMING | 400,000 | 10,000 | 410,000 |
| EQUESTRIAN | 290,000 | 90,000 | 380,000 |
| ENVIRONMENTAL EDUCATION (2) | 290,000 | 0 | 290,000 |
| MEADOWS | 220,000 | 0 | 220,000 |
| CAMPING | 240,000 | 0 | 240,000 |
| GOLF | 190,000 | 0 | 190,000 |
| BOAT/ WINDSURF | 100,000 | 0 | 100,000 |
| RENTAL FACILITIES (3) | 80,000 | 0 | 80,000 |
| SPECIAL RECREATION (4) | 30,000 | 0 | 30,000 |
| **TOTAL VISITATION** | **9,270,000** | **3,270,000** | **12,540,000** |

(1) Includes general use not specifically associated with any other category.
(2) Includes visits associated with visitor centers only.
(3) Includes use of facilites for meetings, banquet and food services.
(4) Special recreation includes archery, markmanship, model trains and boats.

Sources: Park District Operations Department; Strategy Research Institute;
Economic & Planning Systems, Inc.

## Table A-7
## Average Annual Park Visitation*
## East Bay Park District Economic Study

| Activity | Parks (1) Visitors | Trails Visitors | Total Visitors |
|---|---|---|---|
| WALKING, HIKING, RUNNING, ETC. | 2,795,000 | 1,745,000 | 4,540,000 |
| BICYCLE RIDING | 785,000 | 1,330,000 | 2,115,000 |
| DOG WALKING | 1,525,000 | 425,000 | 1,950,000 |
| OTHER (2) | 1,410,000 | 135,000 | 1,545,000 |
| PICNIC | 1,320,000 | 0 | 1,320,000 |
| FISHING | 490,000 | 10,000 | 500,000 |
| SWIMMING | 450,000 | 10,000 | 460,000 |
| EQUESTRIAN | 290,000 | 90,000 | 380,000 |
| ENVIRONMENTAL EDUCATION (3) | 290,000 | 0 | 290,000 |
| MEADOWS | 250,000 | 0 | 250,000 |
| CAMPING | 240,000 | 0 | 240,000 |
| GOLF | 190,000 | 0 | 190,000 |
| BOAT/ WINDSURF | 100,000 | 0 | 100,000 |
| RENTAL FACILITIES (4) | 80,000 | 0 | 80,000 |
| SPECIAL RECREATION (5) | 30,000 | 0 | 30,000 |
| **TOTAL** | **10,245,000** | **3,745,000** | **13,990,000** |

*Average annual park visitation represents the mid-point of high (15.5 million) and low (12.5 million) visitation estimates for 1999.

(1) The use of "Parks" refers to use of all parks and open space, all trails internal to these parks and all recreational facilities associated with them.

(2) Includes general use not specifically associated with any other category.

(3) Includes visits associated with visitor centers only.

(4) Includes use of facilites for meetings, banquet and food services.

(5) Special recreation includes archery, markmanship, model trains and boats.

Sources: Park District Operations Department; Strategy Research Institute; Economic & Planning Systems, Inc.